ELECTRICAL REVIEW

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Electricity Appointments

Attempt to Maintain a Balance

ONE strong argument put up by the opponents of electricity supply nationalization was the possibility (they said "probability") that appointments to the new controlling authorities would have too strong a political flavour. We, ourselves, emphasized that a predominantly political "set-up" would tend to undo all the good work accomplished during the past half-century and very likely result in serious deterioration of the service to the public.

As things are turning out, fears regarding nationalization on this ground are being proved groundless. Although there is just a tinge of political colour in the appointments which have been made, the people selected by the Minister of Fuel and Power have been almost wholly chosen from the industry itself. Even those whose appointments may have been made partly on account of their political background have also had some connection with the industry during their careers.

Non-Political Trend Continues

We have already commented upon the nature of the personnel of the British Electricity Authority and although the appointment of chairmen of the Area Boards is not yet complete it is clear that the same policy is being followed. Twelve names have been announced and of these ten are well-known to the electrical industry and one other has strong electrical affiliations.

Another fear which had been somewhat prevalent was that the position of company men might have been prejudiced by the strong opposition to nationalization put up by the company side of the industry or by the fact that the taking over of municipal undertakings was merely a change in the form of public ownership. This, too, is proving not to be the case, although it has to be admitted that the weight of representation is so far on the side of the public authority element.

Equitable Distribution

Looking at the British Electricity Central Authority and the Area Board chairmen so far announced, as a whole, we find that of the nineteen (excluding the chairman of the North of Scotland Board, who is a member of the B.E.A. *ex officio*) five come from the public authority side and five from the companies; the Central Electricity Board and the Electricity Commissioners (which may be considered public bodies) have three representatives; and the rest are not "working" members of the electricity supply industry, although they are mostly connected with it in one way or another.

Up to date, ten senior executive appointments have been made; of these half have gone to Central Board men, three to company representatives and two to public authority officials.

Thus it will be seen that the tendency has been to distribute positions fairly equitably, although nobody should complain if the many further appointments which have to be made do not preserve the balance. After all personal qualifications and experience must be the primary considerations regardless of previous

attachments. Still it would give more general satisfaction, we suppose, if, other things being equal, there were still maintained an even distribution between the two sides of the industry.

Trafford Gas Turbine

THE 15,000-kW open-cycle oil-fired gas turbine to be installed at Trafford power station will be the first for public supply in this country. It is a logical outcome of experience gained by the Metropolitan-Vickers Co. in the development of gas turbines for marine propulsion and aircraft. Mr. H. G. Bell, chief engineer and manager of the Stretford & District Electricity Board, expects its thermal efficiency to equal, at least, that of the most efficient steam set. Having regard to the cost of oil, it appears to us likely, however, that it will deal mainly with peak loads, for which its quick-starting properties would make it especially suitable. A further advantage in the present instance, in view of local site restrictions, is its compactness.

Load Shedding

IMPROVEMENTS in the shape of the national and regional load curves for November, as compared with the same month last year, include a considerable increase in night load, some reduction in day peaks and a more gradual rise in demand as the early morning load comes on. These give ground for hope that load shedding, except in very severe weather, may be avoided this winter, unless it be during the old danger period of the power and lighting overlap. The Central Electricity Board has asked that everything possible should be done to reduce loads between 4 and 6 p.m. to avoid trouble.

Marine Electrical Engineers

WITH the growing tendency towards electrical propulsion of ships, the qualifications of sea-going electrical engineers become of increasing importance, as a correspondent points out this week. At various times the Board of Trade has expressed willingness to consider the issue of an endorsement to engineers' certificates of competence that would cover electrically propelled vessels, on lines similar to the "Diesel endorsement," as soon as their number was sufficient to warrant this course. Many foreign-going ships of this kind are now coming under British ownership and management, and taking into account those built for United States ownership during the war the total is now about a thousand. This should be enough to justify action by the Ministry of Transport, who are successors to the Board of Trade in that sphere.

Electricity and Gas

FROM the electrical angle the most impelling point in Sir Arnold Gridley's address to the Batti-Wallahs was the fear he expressed that under nationalization competition between electricity and gas might disappear. From nearly half a century's experience in electricity supply matters, he is in a strong position to assess how much the public has benefited through the efforts made by each of the rivals to improve upon the service given by the other. The electrical industry at any rate entertains no doubt of the public verdict, to give effect to which is the intention implied in national ownership. It is very much in the interests of the public that the same zeal in emulation shall be maintained.

British Railways

THE success of the scheme for the unification of railways in the New Year will be judged ultimately by the encouragement offered to electrification, for reasons often stated in these columns. Too much cannot be expected immediately in view of more urgent claims on national resources for the time being. Sir Cyril Hurcomb has said that the British Transport Commission will keep constantly in mind the question of main-line electrification. Coming from one who was a former chairman of the Electricity Commissioners, this statement may be taken as having some weight.

Goods Wagon Clearance

INTENSIVE efforts are being made by the railway companies to speed up the release of goods wagons, the shortage of which is proving a serious handicap to industry. The war caused a considerable delay in repair and replacement and the position facing the railways this winter is causing some concern. The companies themselves and their staffs are arranging to work longer hours and at week-ends unloading wagons to enable them to be released rapidly and an appeal is made to all industrial concerns to do the same at their end.

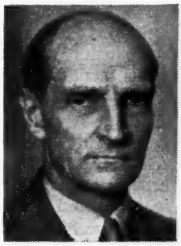
Area Board Chairmen

Minister Announces Nominations

IN the House of Commons last week, Mr. H. Gaitskell, Minister of Fuel and Power, stated that he had invited eight men to become chairmen-designate of Area Electricity Boards in addition to the four named on August 21st. He said that he hoped to announce the names for the two remaining areas—the South East Scotland Area Board and the South Western Area Board, together with the deputy chairmen, in the next few days.

Mr. N. R. Elliott
(South Eastern)

Mr. Norman R. Elliott, M.A., M.I.E.E., A.M.Inst.C.E., who has been invited to become chairman-designate of the South Eastern Area Board, is general manager and chief engineer of the London & Home Counties Joint Electricity Authority and previously held the position of borough electrical engineer at Gravesend (1939–44). He was appointed borough electrical engineer at Wimbledon in 1944, but before taking up his duties there he joined the Royal Engineers to carry out important work in France. He was later promoted colonel and appointed Deputy Director of Works, 21st Army Group. He returned to civilian life in 1945, and was appointed "chief" with the J.E.A. in 1946. Mr. Elliott is a barrister-at-law.



Mr. H. Nimmo
(Southern)

Mr. H. Nimmo, M.Inst.C.E., M.I.E.E., M.I.Mech.E., who was to act as area liaison officer of the British Electricity Authority, now becomes chairman-designate of the Southern Area Board. He was appointed chief engineering inspector to the Electricity Commission in 1929 after a distinguished career in Burma, and in 1945 succeeded the late Sir Leonard Pearce as Electricity Commissioner. He will continue to act as part-time Commissioner until the Commission is dissolved.

Mr. C. T. Melling
(Eastern)

Mr. C. T. Melling, M.I.E.E., who is the chairman-designate of the Eastern Area Board) has been borough electrical engineer at Luton since 1943 and was previously with Edmundsons Electricity Corporation, Ltd. He has specialized in electricity supply economics and was awarded the Llewelyn B. Atkinson Premium by the Institution of Electrical Engineers in 1943 for a paper on "General Factors Affecting the Unification of Electricity Supply Tariffs."

Mr. C. R. King
(East Midland)

Mr. C. R. King, M.Inst.F. (chairman-designate of the East Midland Area Board), is general manager of the Derbyshire & Nottinghamshire Electric Power Co., the Leicestershire & Warwickshire Electric Power Co., the Midland Electric Light & Power Co., Ltd., and the Tamworth District Electric Supply Co., Ltd., all of which are subsidiaries of the Midland Counties Electric Supply Co., Ltd. He joined the Derby & Notts Co. in 1919 and served in all departments of this undertaking and its associated companies before being appointed deputy general manager of the group in 1936. He became general manager in July, 1940. He has been a member of the Council of the Incorporated Association of Electric Power Companies

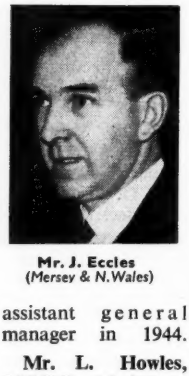
Mr. W. M. Lapper
(Yorkshire)

since 1940, and was recently appointed a member of the National Consultative Committee of the Central Electricity Board. He has been a member of No. 7 Area Joint Industrial Council and Joint Board for more than fifteen years.

Mr. W. M. Lapper, O.B.E., who has been invited to become chairman-designate of the Yorkshire Area Board, is manager for the Mid-East England and North-East England Areas of the Central Electricity Board. He joined the C.E.B. in 1934 as an assistant operation engineer for Central England, and later became operation engineer for North-West England and North Wales. He was appointed to his present position with the Board in 1946.

Mr. H. H. Mullens
(North Eastern)

Mr. H. H. Mullens, B.Sc., M.I.E.E. (chairman-designate of the North Eastern Area Board) is assistant general manager of the North-Eastern Electric Supply Co., Ltd., to which he went in 1924 as an assistant engineer. Since he joined the company he has held the positions of chief assistant to the engineer of the power department, southern area, and engineer in charge of that department; he was appointed assistant general manager in 1944.



Mr. J. Eccles
(Mersey & N. Wales)

Mr. J. S. Pickles
(South-West Scotland)

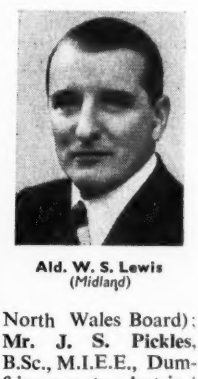
Mr. L. Howles, M.I.E.E. (chairman-designate of the South Wales Board) is general manager of the South Wales Electric Power Co., a position which he has held since 1934. Before going to South Wales Mr. Howles was with the Shropshire, Worcestershire & Staffordshire Electric Power Co., in various posts, finally becoming general manager of that company. He represents the South Wales Co. on the Council of the Incorporated Association of Electric Power Companies and has for sixteen years been a member of both the National and District Joint Industrial Councils and Joint Boards. He is a member of the Consultative Technical Committee of the C.E.B. (South Wales and South-West England) and has served on the Statutory Committee set up by the Electricity Commissioners to consider uniformity of tariffs for electricity supply. He has served on the Council of the South Wales Institute of Engineers and on the Committee of the Western Centre of the Institution of Electrical Engineers.

Mr. G. Gibson
(North West)

Mr. George Gibson (North West Area Board) has been a trade union official for about thirty-four years and in 1940–41 was chairman of the Trades Union Congress. He is a member of the Lancashire Industrial Development Council.

The four Area Board chairmen whose names have already been announced are: **Mr. J. Eccles,** B.Sc., M.I.E.E., A.M.I.Mech.E., city electrical engineer of Liverpool and president of the I.M.E.A. (Merseyside and North Wales Board); **Mr. J. S. Pickles,** B.Sc., M.I.E.E., Dumfries county electrical engineer (South-West Scotland Board); **Mr. H. J. Randall,** F.C.I.S., managing director of the City of London Electric Lighting Co., Ltd., and president of E.D.A. in 1946–47 (London Board); and **Alderman W. S. Lewis,** vice-chairman of the West Midlands J.E.A. (Midland Board).

Mr. H. J. Randall
(London)



Ald. W. S. Lewis
(Midland)

Electricity Areas

"Allocation" of Existing Undertakings

AS we reported last week, the fourteen electricity areas have been defined by the Minister of Fuel and Power and the undertakings which fall into each area are shown below.

Sixteen of the present authorized undertakers give supplies in territories which will be found to fall into the areas of more than one Board. Under Section 14 (2) (*b*) of the Electricity Act, 1947, the undertakings of these authorized undertakers must all initially vest in one of the Boards (with the main exception of generating stations and main transmission lines). In these cases, therefore, it has been necessary to choose in which area the undertaking shall vest initially, and the decision has been made so that the initial vesting accords with the location of the greater part of the assets of the undertaking. After the vesting date those parts of the undertaking which fall within other areas will be transferred in accordance with the provisions of Section 19 of the Act.

There are also three authorized undertakers owning two or more undertakings which will be in different areas. Here again it is necessary to provide that all property, etc., of the undertaker will initially vest in a single Board, and the same principles have been followed.

London Board

Public Authorities (30)

Barking, Barnes, Battersea, Beckenham, Bermondsey, Bethnal Green, Bexley, Bromley, Dartford, East Ham, Erith, Fulham, Hackney, Hammersmith, Hampstead, Ilford, Islington, Leyton, Poplar, St. Marylebone, St. Pancras, Shoreditch, Southwark, Stepney, Stoke Newington, Walthamstow, West Ham, Willesden, Wimbledon, and Woolwich.

Companies (10)

Central London Electricity, Chislehurst, City of London, County of London, Foots Cray, London E.S. Corp., London Power Co., Notting Hill, South London Corp., and South Metropolitan.

South Eastern Board

Public Authorities (25)

Ashford, Bexhill, Brighton, Canterbury, Croydon, Dover, Eastbourne, East Grinstead, Epsom & Ewell, Faversham, Gillingham, Gravesend, Guildford, Hastings, Horsham, Hove, Kingston, London J.E.A., Maidstone, Margate, Broadstairs & Dist. Joint Board, Reigate, Tonbridge, Tunbridge Wells, Walton & Weybridge, and Worthing.

Companies (24)

Burgess Hill, Central Sussex, Folkestone, Guildford (Cranleigh undertaking), Herne Bay, Horley, Kent E.P. Co., Lewes, Peacehaven, Ramsgate, Richmond, Ringmer, Seaford & Newhaven, Sevenoaks, Sheerness, Shoreham, South East Kent, Steyning, Sussex, Uckfield (electricity undertaking), Weald, West Kent, Whitstable, and Woking.

Southern Board

Public Authorities (22)

Aldershot, Basingstoke, Bournemouth, Brentford & Chiswick, Calne, Chichester, Dorchester, Ealing, Fareham, Heston & Isleworth, High Wycombe, Maidenhead, Marlborough, Oxford, Portland, Portsmouth, Reading, Southampton, Swindon, Weymouth & Melcombe Regis, Winchester, and Witney.

Companies (26)

Alton, Ascot (electricity undertaking), Blandford Forum, Bognor (electricity undertaking), Bournemouth & Poole, Brentford, Burford, Egham & Staines, Farnham (electricity undertaking), Isle of Wight, Metropolitan, Mid-Southern (electricity undertakings), Milford-on-Sea, Milton & Barton-on-Sea, Petersfield, Ringwood, Salisbury, Slough & Datchet, Uxbridge, Wessex, West Hampshire, Whitchurch (electricity undertaking), Wilton, Windsor, Woodstock, and Yorktown (Camberley) (electricity undertaking).

South Western Board

Public Authorities (11)

Barnstaple, Bath, Bridport, Bristol, Exeter, Lyme Regis, Plymouth, Plympton St. Mary, Taunton, Tiverton, and Torquay.

Companies (26)

Bideford, Bridgwater, Brixham (electricity undertaking), Bude, Burnham, Chudleigh, Cornwall, Culm Valley, Dawlish, East Devon, Exe Valley, Holsworthy, Ilfracombe, Lynton & Lynmouth, Mid Somerset, Minehead, North Somerset, Paignton, St. Austell, Salcombe (electricity undertaking), Seaton, South Somerset, Teignmouth, Wellington, West Devon, and Weston-super-Mare.

Eastern Board

Public Authorities (21)

Aylesbury, Bedford, Clacton, Colchester, East Dereham, Felixstowe, Finchley, Great Yarmouth, Harwich, Hertford, Hitchin, Hornsey, Ipswich, King's Lynn, Lowestoft, Luton, Norwich, Peterborough, Southend, Thurrock, and Watford.

Companies (17)

Aldeburgh, Beds, Cambs & Hunts, Brentwood, Bungay (electricity undertaking), Cambridge, Chesham, Colne Valley, East Anglian, East Suffolk, First Garden City (electricity undertaking), Frinton-on-Sea, Newmarket, Northmet, Northwood, Welwyn, Wickford, and Wisbech.

East Midlands Board

Public Authorities (21)

Ashbourne, Bolsover, Burton-upon-Trent, Chesterfield, Coventry, Derby, East Retford, Kettering, Leicester, Lincoln, Long Eaton, Loughborough, Mansfield, Newark, Nottingham, Nuneaton, Rugby, Sleaford, Spalding, Uttoxeter, and Worksop.

Companies (12)

Boston, Derby & Notts, Leicestershire & Warwick, Melton Mowbray, Midland, Mid Lincs, Northampton, Oakham (electricity undertaking), Rushden, Tamworth, Urban, and Wellingborough.

Midlands Board

Public Authorities (19)

Birmingham, Cannock, Cheltenham, Gloucester, Leek, Lichfield, Malvern, Newcastle-under-Lyme, N.W. Midlands J.E.A., Stafford, Stoke-on-Trent, Stone, Sutton Coldfield, Walsall, Warmley, West Bromwich, W. Midlands J.E.A., Wolverhampton, and Worcester.

Companies (7)

Chasetown, Market Drayton, Midland E. Corporation, Shrops. Worcs & Staffs, Stroud, Thornbury, and W. Gloucester.

South Wales Board

Public Authorities (31)

Aberdare, Abertillery, Ammanford, Barry, Bedwas & Machen, Bedwellty, Bridgend, Caerphilly, Cardiff Corp., Cardiff R.D.C., Cwmbran, Ebbw Vale, Gellygaer, Llandrindod Wells, Maesteg, Milford Haven, Mountain Ash, Mynyddislwyn, Neath Corp., Neath R.D.C., Newport, Ogmore & Gawr, Penarth, Penybont, Pontardawe, Pontypridd, Port Talbot, Rhondda, Risca, Swansea, and Tredegar.

Companies (11)

Aberayron, Carmarthen, Chepstow, Gorseinon, Llanelly, Merthyr, Monmouth, Pontypool, Porthcawl, South Wales, and West Cambrian.

Merseyside and N. Wales Board (33)

Aberystwyth, Bangor, Bethesda, Birkenhead, Caernarvon, Chester, Colwyn Bay, Congleton, Connah's Quay, Conway, Crewe, Dolgelly, Formby, Hawarden, Holyhead, Hoylake, Liverpool, Llandudno, Llanfairfechan, Llangollen, Menai Bridge, Mold, N. Wales & S. Ches. J.E.A., Oswestry, Penmaenmawr, Prestatyn, Rhyl, Ruthin, St. Helens, Southport, Wallasey, Warrington, and Wrexham.

Companies (8)

Borth & Ynyslas, Elec. Dist. of N. Wales, Machynlleth, Mersey, Mid-Cheshire, North Wales, Towyn & Aberdovey, and Yale

Yorkshire Board

Public Authorities (42)

Adwick-le-Street, Barnoldswick, Barnsley, Batley, Bingley, Bradford, Bridlington, Brighouse, Castleford, Cleethorpes, Colne Valley, Dearne District Board, Dewsbury, Doncaster, Earby, Elland, Gainsborough, Grimsby, Halifax, Hebden Royd, Heckmondwike, Holmfirth, Huddersfield, Hull, Ilkley, Keighley, Leeds, Louth, Mexborough, Mirfield, Morley, Normanton, Ossett, Pudsey, Rotherham, Scunthorpe, Sheffield, Shipley, Skipton, Spenborough, Todmorden, and Wakefield.

Companies (8)

Buckrose, Craven Hydro, Elec. Dist. Yorks., North Lincs & Howdenshire, S.E. Yorkshire, Tadcaster, West Riding Auto. Co., and Yorkshire Electric Power.

North Eastern Board

Public Authorities (21)

Amble, Crook & Willington, Darlington, Eston, Guisborough, Harrogate, Middlesbrough, Newcastle-upon-Tyne, Redcar, Richmond, Scarborough, Seaham, Skelton & Brotton, South Shields, Stanley, Stockton-on-Tees, Sunderland, Tynemouth, West Hartlepool, Whitby, and York.

Companies (4)

Askrigg & Reeth, Hawes, Newcastle, and North Eastern.

North Western Board

Public Authorities (63)

Accrington, Alderley Edge & Wilmslow Board, Ashton-in-Makerfield, Ashton-under-Lyne, Atherton, Bacup, Barrow, Blackburn, Blackpool, Bolton, Bredbury & Romiley, Brierfield, Burnley, Bury, Buxton, Carlisle, Cheadle & Gatley, Clitheroe, Colne, Darwen, Eccles, Farnworth, Fleetwood, Grange, Haslingden, Hazelgrove & Bramhall, Heywood, Hindley, Horwich, Kendal, Lancaster, Leigh, Littleborough, Lytham St. Annes, Macclesfield, Manchester, Marple, Middleton, Millom, Milnrow, Morecambe & Heysham, Nelson, New Mills, Newton-le-Willows, Oldham, Padiham, Preston, Radcliffe, Rawtenstall, Rochdale, Sale, Salford, Stalybridge, etc., Board, Stockport, Stretford & Dist. Board, Swinton & Pendlebury, Thornton Cleveleys, Turton, Ulverston, Whitehaven, Whitworth, Wigan, and Workington.

Companies (13)

Altrincham, Cark, Keswick, Lancs E.P., Mid-Cumberland, Ormskirk, Penrith, Sedbergh, Settle, S. Cumberland, Trent Valley, Westmorland, and Windermere.

South East Scotland Board

Public Authorities (8)

Borrowstounness, Denny & Dunipace, Edinburgh, Falkirk, Kirkcaldy, North Berwick, Stirling, and W. Lothian.

Companies (6)

Fife, Lothians, Musselburgh, Scottish Central, Scottish Midlands, and Scottish Southern.

South West Scotland Board

Public Authorities (15)

Airdrie, Ayrshire, Coatbridge, Dumbarton (assets owned by E.S. Corp.), Dumfries, Dumfriesshire, Dumbartonshire, Glasgow, Greenock, Hamilton, Helensburgh, Kirkcudbrightshire, Lanarkshire, Motherwell & Wishaw, and Paisley.

Companies (7)

Clyde Valley, E.S. Corporation, Galloway Water Power, Lanarkshire Hydro Elec., Skelmorlie, Strathclyde, and Wigtownshire.

North of Scotland Board

Public Authorities (11)

Aberdeen, Buckie, Dundee, Fort William, Inverness, Lerwick, Lossiemouth & Brandenburgh, N. of Scotland Hydro-Elec. Board, Oban, Perth, and Wick.

Companies (9)

Campbeltown & Mid-Argyll, Crieff, Dunoon, Grampian, Loch Leven, N. of Scotland (Brechin and Montrose), Peterhead, Stornoway, and Thurso.

London J.E.A. Estimates

THE London and Home Counties J.E.A. proposes to apply for sanction to borrow £448,000 to meet capital expenditure during 1948, including £180,000 for mains and services and £200,000 for substations and equipment. The Finance Committee points out that this would raise the total sanctioned to a figure in excess of the Authority's borrowing limit of £7,000,000. The matter is being considered by the Electricity Commissioners as the result of inquiries initiated by the Authority.

Views on the News

Reflections on Current Topics

IN situations where risks of electric shock are likely to be serious, I have always held that a.c., notwithstanding a peak voltage of $\sqrt{2}$ times its r.m.s. value, ought to be inherently safer than d.c. of the equivalent declared voltage. With a.c. the voltage can be stepped down to a figure that is quite safe under the unfavourable conditions that accompany the use of portable tools and lamps. Such conditions occur in the building industry, and I was glad to note last week at Olympia the emphasis placed on this aspect of safety in the exhibit of the Factory Department. Increasing advantage, I was informed by the inspectorate, is being taken of this asset of a.c. supplies, centre-tapped 110-V transformers having been especially developed for this service.

* * *

A few weeks ago I referred to the endeavours of three electricity supply companies in West Wales to induce housewives to stagger their washing days with the object of relieving the load on Monday mornings. The response was not conspicuously favourable. Now the Burnley Fuel Economy Committee has gone a step further by suggesting that housewives should make Saturday their washing day. Surely this shows either a complete ignorance of or a total disregard for the art of running a home efficiently and harmoniously. Unless of course the idea is that, with the growing prevalence of the five-day week, the husband shall lend a hand.

* * *

An extraordinary example of misconceived ingenuity is recorded in a report on conditions in Malaya which I have just read. As a means of catching wild pig some of the natives have devised a method of making use of the high-voltage overhead lines. At a selected place where it is thought that the pig will pass short stakes are driven into the ground, with glass bottles inverted over them to serve as insulators. Bare copper wires are then tied to the bottles and a single wire is run back, also on posts and bottle necks, and hooked on to the nearest high-voltage line by means of a long insulated operating rod. Two Chinese were caught with the materials for one of these pig traps in their possession and were given the maximum sentence under the Electricity Enactment, but as the traps are usually set at dusk and taken down at dawn they are difficult to detect. This dangerous practice resulted in the death of one Army officer on patrol and it is feared that several other people in Perak have met their death in this way. The question of increasing the penalty for the offence is now under consideration.

* * *

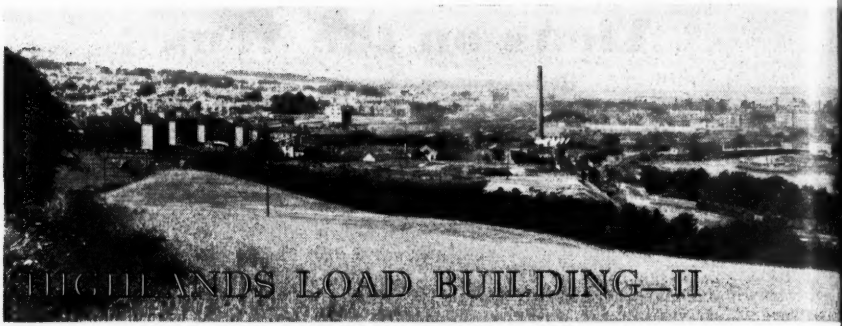
Power cuts are rare occasions in H.M. ships with their self-contained generating plant and emergency sets. Therefore I can sympathize with Captain Taprell Dorling ("Taffrail," the writer of delightful naval stories) in his indignation at being deprived of his supply by the Fulham Corporation. But my sympathies are equally with the Corporation who have incurred the gallant captain's displeasure and I think that he is hardly just in comparing them (in the *Fulham Chronicle*) with "Nazi gauleiters" and "stupid and arrogant men" because they have to take steps which are as abhorrent to them as to their consumers.

* * *

There have been repercussions in the House of Commons from the Stoke-on-Trent case which I mentioned last week. A firm of cleaners was prosecuted by the Ministry of Fuel and Power under the Control of Fuel Order, 1942, for using an electric sign operated from a dry battery. The offence was proved but the case was dismissed under the Probation of Offenders Act. Mr. Gaitskell was questioned on the matter by Mr. Erroll and Mr. Orr-Ewing and admitted that the Ministry's legal costs amounted to £15. It is reported, however, that the defendants' costs were several times this sum. Mr. Gaitskell should impress upon his officials that zeal (a most desirable attribute) should be tempered with discretion, not to say common sense.

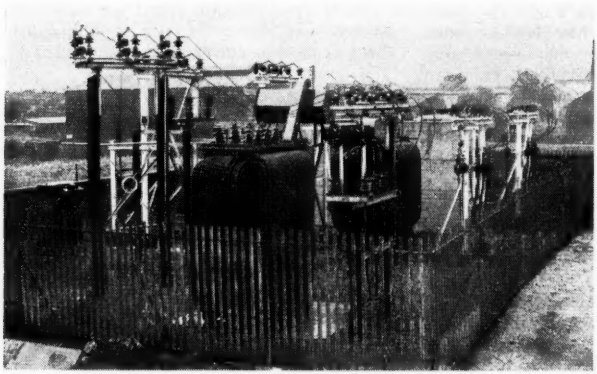
* * *

A Cambridge citizen has complained that the undergraduates there seem to "waste the daylight hours in sport and pleasure" and then study (by electric light) into the early hours of the morning. There was a time when burning the midnight oil was accounted for righteousness.—**REFLECTOR.**



HIGHLANDS LOAD BUILDING—II

AT an early stage in our recent tour of the Scottish Highlands, which we commenced to describe in the *Electrical Review* of November 7th, 1947, to illustrate the load-building activities in this large and sparsely populated area, we made one of the longest halts of the tour at Perth because of the exceptional and varied interests in this city where are the headquarters of the Grampian Electricity Supply Company. A clean, quiet and progressive city, Perth has a population of about 35,000. Its unique geographical position makes it a most important road and rail centre and in truth a gateway to the Highlands and it is thus the obvious location for the control of this Highland undertaking.

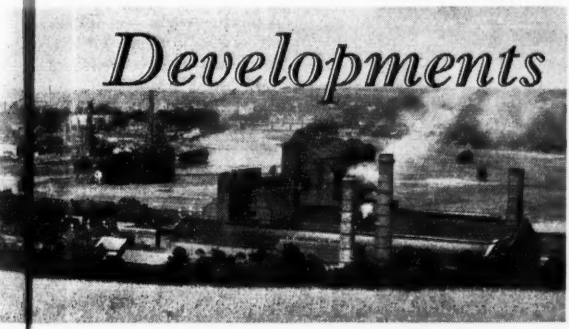


A 33-kV line from Abernethy terminates at a substation immediately behind the Perth generating station

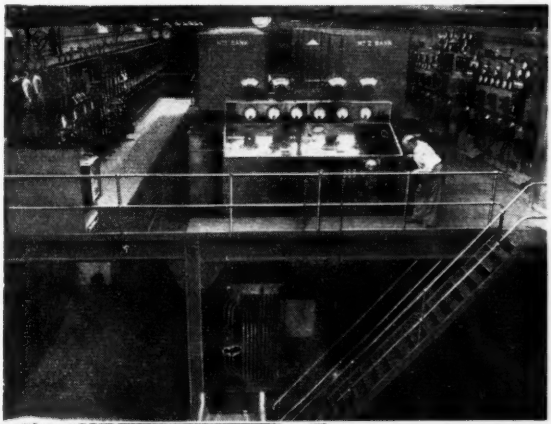
The city undertaking is owned by the local authority, but the thermal generating station from which the town originally derived its supply was acquired by the Grampian Company in 1933 when a duplicate 33-kV overhead line was erected from Abernethy to afford a bulk supply, which at present amounts to 6,000 kW. From a terminal point outside the city this line is extended by means of duplicate 0·075-sq in. three-core oil-filled cable to an outdoor substation which was established immediately behind the Perth generating station. This outdoor substation now accommodates three 5,000-kVA, 33/11-kV main transformers, together with outdoor 33-kV current transformer for the "Translay" feeder protection; provision has been made for the installation of 33-kV oil circuit breakers at a later date. The city proper was, and still is, supplied from a d.c. network, and to serve this in the most efficient way the most modern of the steam generating plant in the power station was retained for winter peak-load service, while 3,200 kW of rectifier equipment was installed for base-load working.

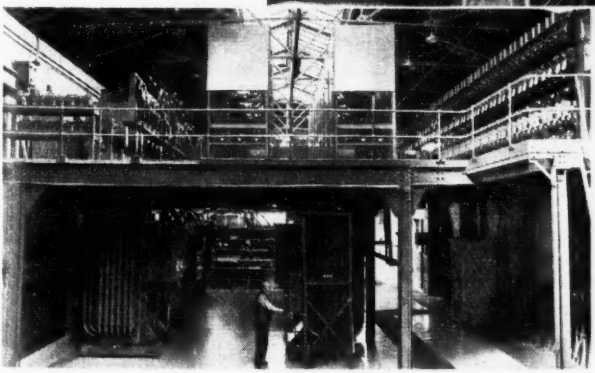
The retained steam plant referred to includes a 1,000-kW and a 2,000-kW Allen turbo-generator sets, the turbine in each case running at 4,000 r.p.m. and driving a 450-r.p.m. generator via a double-helical reduction gear. These two sets are disposed one at each end of the turbine room, and they are supplied with steam at 200 lb per sq in. from three Babcock & Wilcox boilers

Developments at Perth



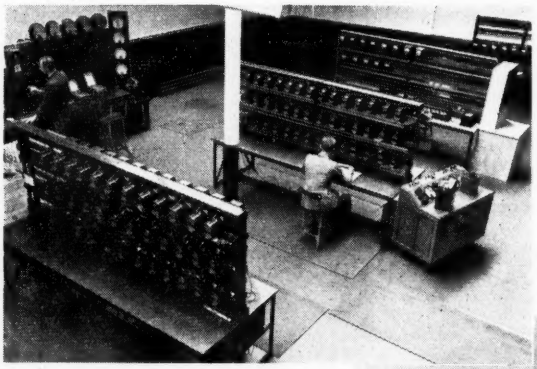
giving a total of 77,000 lb (35,000 kg) per hr. The difficulty of installing the new rectifier plant in the turbine room, which had insufficient floor space, was overcome by an unusual but very successful constructional scheme which was conditioned by the necessity of maintaining supply to the d.c. network whilst work was in progress. The centre of the turbine room was cleared of its equipment and a steel gantry was installed so as to form an upper floor. On this upper floor the 3,200 kW of grid-controlled mercury-arc equipment has been installed in two banks, each comprising two two-bulb assemblies and a four-bulb assembly, the bulbs being 400-A, six-arm units. These two rectifier banks are arranged in ironclad cubicles in two lines down the centre of the gantry, and at each side of the gantry, facing the rectifier banks, have been arranged two distribution boards, one d.c. with incoming switches from the rectifiers and outgoing switches to the city network, and one 11 kV with two incoming oil circuit breakers from the outdoor substation, six outgoing circuit breakers to the rectifier transformers and five outgoing circuit breakers for the 11-kV network at the south of the area and the a.c. system on the outskirts of the city, which has been installed since the





The difficulty of installing the new rectifier plant in the turbine room was overcome by an unusual construction scheme. Rectifiers, 11-kV and d.c. switchboards and control desk on gantry; rectifier transformers under gantry; note turbo-alternator set at far side of gantry, looking through

acquisition of the generating station. The six rectifier transformers are installed at the turbine-floor level underneath the gantry. These transformers are provided with on-load tap-changing facilities which provide the necessary voltage regulation for the d.c. network. The rectifiers are equipped for fully automatic working, the various relays, contactors, voltage regulators, and grid units being contained in a control desk situated at one end of the two lines of rectifier cubicles.



The meter testing building has been laid out to provide for future expansion above the present 25,000 meters per annum

Above : Single-phase meters are tested by a portable set which can be associated with any of the benches

Right: A special feature is the d.c. potentiometer for standardizing sub-standard instruments

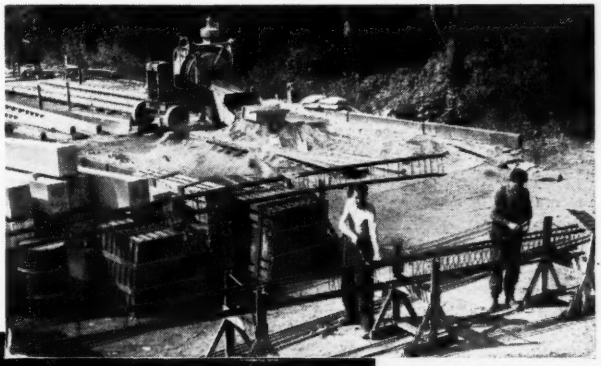
An interesting feature of the rectifier installation is that the grid control is employed only in emergencies. In the event of an overload being imposed on the rectifiers the grid control automatically comes into action and reduces the voltage until the current reaches a pre-set value. Similarly, should the rotary balancer be tripped out of circuit and a dangerous condition of voltage unbalance thereby arise on the three-wire d.c. system, the high-voltage side of the system would be selected and its voltage automatically reduced to a pre-set value. Following a complete cessation of the supply, which fortunately is very rare, it is possible to re-establish the voltage by running up from zero. This operation is also carried out by the grid control, in this case coupled with hand regulation.

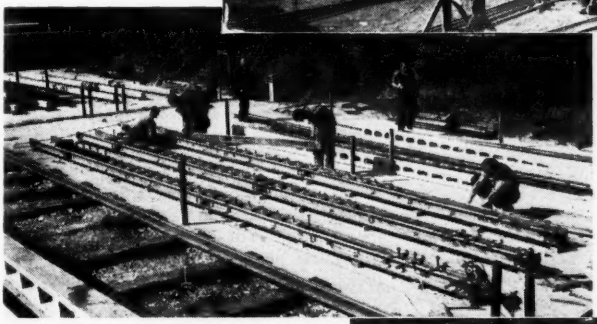
Another place in Perth which we found of particular interest is the new meter test and repair centre which has been established by the supply company in a large and airy building with ample natural lighting situated away from the dusty atmosphere—to wit, a disused church. The building has been laid out in respect of the flow of the meters and the repair and test equipments to provide for considerable future expansion above the present figure of 25,000 meters which are dealt with per annum. This includes both new meters and meters removed from consumers' premises under a routine changing programme.

In view of the long distances over which meters have to be transported special trays have been designed, each holding six d.c. or a.c. single-phase meters or, in modified forms of the tray, prepayment meters and polyphase meters; but all the trays have the same outside dimensions. Each meter is delivered to the stores in its particular tray with which it remains during its transit through the various departments: a Morris elevating truck is used to reduce handling to a minimum. The lay-out is designed on the straight progress flow principle, from the stores to the repair shops, to the calibration bench, to the test bench and to the stores again, and progress at any point in this circuit is readily observable.

Each meter is overhauled individually, and records are made of the conditions of the pivots, jewels and circuited parts of the

meter from which repair estimates can be calculated for each make and type of meter. After overhaul the off-circuit meters are calibrated and adjusted in batches of 25, after which they are transferred to the main test benches for dial tests. For this work the off-circuit and new meters are



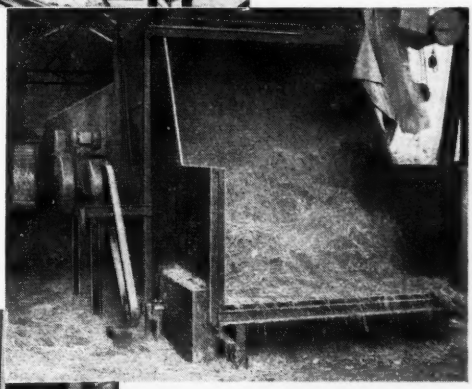


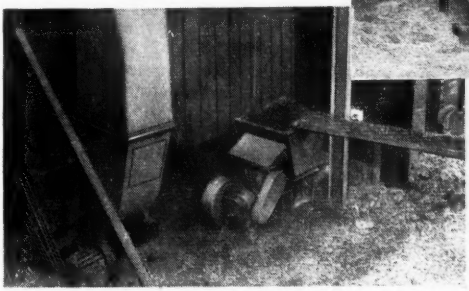
A concrete-pole factory has been established to overcome the present difficulties of obtaining wood poles
Above : Each pole is built up on a reinforcement cage
Left : After setting, the moulds are collapsed

Vick three-phase bench equipped for a 500-A output, the meters being tested

mixed, so that there is direct comparison between the two classes of meters during the last test. Before this, however, new meters are bank tested at required loads to specified limits of error.

Single-phase meters are tested by a portable Metro-Vick test set which can be associated at any one time with any one of the test benches. Polyphase and special meters are tested by means of a fixed Metro-

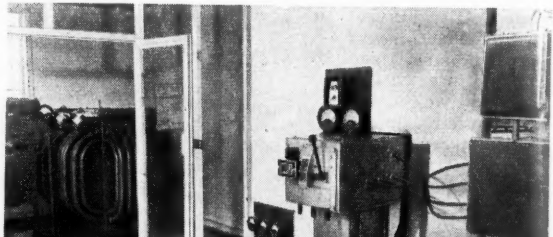




The production of grass meal represents an almost ideal electrical load ; feeding wet grass and fan and stoker drives

against standard current transformers and wattmeters. A special feature of the installation is the Cambridge d.c. potentiometer which is used for standardizing sub-standard indicating instruments for use in the test room

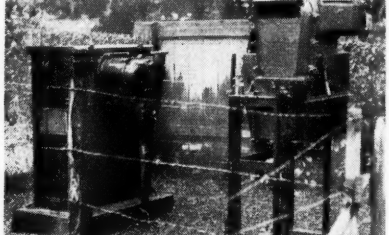
and by other undertakings. The special point of interest in this equipment is the elimination of the high-voltage battery. The voltage for the instruments is obtained from an electronic stabilizer which is fed from a d.c. rotary transformer with an input of 12 V and an output of up to 600 V and 150 mA. For the transport of meters a 30-cwt van periodically tours the northern area, depositing and collecting meters and using the special trays referred to for this purpose.



At Scone we saw the supply arrangements (1,000-kVA indoor substation) for the Perth aerodrome

Another point of special interest at Perth is the concrete-pole factory which has been established as a means of overcoming the present serious difficulties in obtaining wood poles for transmission and distribution lines. The factory is laid out for a probable production of 30 poles per week. Each pole is built up on a metal re-inforcement cage. Each cage is inserted in a collapsible mould. After setting, the moulds are collapsed and the poles set aside by crane for hardening.

On the outskirts of Perth, Grass Products, Ltd., have three modern plants for the production of cattle food grass meal directly from "wet" grass. In principle all three plants are similar, the wet grass being conveyed into and through a drying chamber, which is served by the gases from a coal-fired furnace, and from the chamber the dried material is passed to a chopper or pre-breaker from which it is fed to a hammer mill from which it is delivered almost in powder form ready for packing for delivery. About 92 h.p. of motors is employed for the most modern of these plants, by far the largest drive being that of the 50-h.p. motor for the hammer mill.



The substation serving New Mains Farm is typical of those for small farms on underground networks

The installation dates from 1936 when consumption for the year was 23,500 kWh for an output of 250 tons of the product. The latest plant was installed in 1946 when the consumption for the year for the complete installation was 147,195 kWh for a production of 800 tons of grass meal, and in addition 300 tons of glume meal. The plant is operated day and night from May to October. Mr. Usher, director of Grass Products, Ltd., emphasized, however, that economics of the production demanded drawing of the grass from a large area to a central plant. On the other hand, he said that there was an economic limit to the distance over which the wet grass should be transported.

Near this grass-drying installation at Scone we saw the supply arrangements for the Perth aerodrome which is now owned by Airworks, Ltd., and is used as an elementary training school. The present maximum demand is about 153 kW and the annual consumption is about 321,000 kWh. The substation is fed from a local 11-kV ring main, and it has a transformer capacity of 100 kVA, with Crompton Parkinson oil switchgear on both the 11-kV and the 400-V sides. In the same locality we saw a typical example of the installations which supply small farms from underground networks. In the simplest of compounds a Switchgear Equipment circuit breaker mounted on an angle-iron structure serves a 25-kVA, 11-kV/400-V transformer.

PERSONAL and SOCIAL

News of Men and Women of the Industry

AT the annual meeting of the Chartered Institute of Secretaries held on December 2nd, **Mr. A. Gale Johnson** was elected president in succession to **Mr. H. F. Carpenter** (newly appointed secretary of the British Electricity Authority), and **Mr. C. R. Heathcock,** managing director of the Midland Electric Corporation for Power Distribution, Ltd., was elected senior vice-president.

Sir Noel Ashbridge, B.Sc., M.I.E.E., is one of the five directors who form, under the chairmanship of Sir William Haley, the director-general, the new board of management of the British Broadcasting Corporation. Sir Noel, who has been deputy director-general, is director of technical services and will be in charge of research and development.

Mr. J. N. Graham, secretary of the County of London Electric Supply Co., Ltd., and associated companies, is resigning his post at the end of the year to join the board of Almin, Ltd., in an executive capacity.

The General Purposes Committee of the Belfast City Council has decided against a recommendation of the Council in committee that it should approve a proposal of the Electricity Committee that the city electrical engineer (**Mr. W. Girvan**) should be paid in accordance with the 1941 agreement of the National Joint Committee. Mr. Girvan's present salary is £2,000; under the agreement it would be about £2,500. The chairman of the Electricity Committee has protested against this decision and it is stated that Mr. Girvan is arranging to submit a claim to the National Arbitration Tribunal.

Mr. T. Riley, M.I.E.E., deputy electrical engineer at Burnley, is recommended as acting electrical engineer at £1,200 per annum, plus bonus, as from August, when Mr. T. B. Nutter retired on superannuation.

Mr. G. E. W. Hird, who recently left Bingley to take up the appointment of engineer and manager of Brierfield Urban District Council Electricity Department, received a presentation at Bingley on November 25th by Mr. J. S. Lattin, president of the Bingley Branch of N.A.L.G.O. Mr. Hird, who was accompanied by his wife, was formerly mains superintendent at Bingley.

Mr. T. Rowland, formerly in the Contracts Department of Crompton Parkinson, Ltd., has relinquished his position to join the Electrical Equipment Co. (Leicester), Ltd., as their London sales director, and industrial sales consultant.

Mr. W. Kupfer, of W. & E. Kupfer, Ltd., 38, Glasshill Street, London, S.E.1, is leaving at the end of January for a tour of South Africa, calling on importers in Johannesburg, Cape Town, Durban and Port Elizabeth to interest them in British electrical and radio goods.

Mr. E. A. Langham has relinquished his appointment as sales manager in the Sales Division of the British Aluminium Co., Ltd., to take up a new appointment as general manager for the British Aluminium Co., Ltd., in India. Mr. Langham left last week for India. **Mr. A. W. Langham,** who has been manager of the Sales Planning Department, will, for the present, undertake responsibility for the sales as well as sales planning departments in the Sales Division, with the title of sales manager.

Mr. G. Caton, M.I.E.E., whose appointment as managing director of the Yorkshire Switchgear & Engineering Co., Ltd., was briefly announced in our last issue, was formerly technical director of the company, which he joined in 1938. Before that he was chief engineer and manager of the Switchgear Department of the Brush Electrical Engineering Co., Ltd., Loughborough, and previously held a similar position with the Harland Engineering Co., Ltd., Alloa. He is also a director of Electro Mechanical Manufacturing Co., Ltd., an associated company of the Yorkshire Switchgear Co., and is a member of the Committee of the North Midland Centre of the I.E.E., having previously served on this Committee from 1941 to 1944. He is the patentee of the IVI metalclad switchgear which the company is producing.

Mr. G. Caton

Mr. E. R. Shropshire, Graduate I.E.E., at present with the Stoke-on-Trent Corporation Electricity Department, has been appointed assistant mains engineer with the Nuneaton Corporation Electricity Department.

Mr. H. A. Dell, B.Sc., who is employed by the Mullard Radio Valve Co., Ltd., on research and development work in connection with electronic instruments, has been awarded the degree of Doctor of Philosophy of the London University.

Mr. H. F. Holgate, senior assistant chemist at Valley power station, Bradford, is to become chief chemist at Belfast power station, subject to confirmation of the appointment by Belfast City Council. Mr. Holgate, who was appointed to Valley power station in May, 1944, was educated at Bingley Grammar School and Leeds University, where he took a science

degree in gas engineering. Later he became a fuel technologist with General Refractories, Ltd., at Worksop.

Col. S. Bell has been elected a director of Oldham & Son, Ltd.

Mr. David W. Lyall, B.Sc. (Hons.), A.M.I.E.E., principal teacher of electrical engineering at Coatbridge Technical College, has been appointed organizer of continuation classes by Glasgow Corporation.

Mr. F. Hopps, telephone manager at Newcastle-on-Tyne, is to retire at the end of December after forty-one years with the Post Office telephone system. He started with the National Telephone Co. in 1906. After working in Coventry, Belfast and Sheffield he was transferred to Newcastle-on-Tyne in 1937 as area engineer. Seven years later he was appointed telephone manager at Middlesbrough and in 1946 went to Newcastle-on-Tyne.

Long service awards to employees of the North Eastern Electric Supply Co., Ltd., were made recently by **Viscount Ridley,** chairman of the company. Six male employees with thirty years' service received gold watches, and seven female employees each with twenty years' service received gifts.

The Radio Industries Ball held at the Grand Hotel, Birmingham, on November 24th, brought together a gathering of approximately 400 members of the radio industry, covering the manufacturing, wholesaling, retailing, scientific and technical, and broadcasting spheres. During the evening the chairman of the Club, **Mr. F. B. Jackman,** extended a welcome to all members of the Club and their guests and friends, and introduced the president, Dr. W. Wilson of the Research Department of the G.E.C. and the vice-president, Mr. P. Edgar, Midland Regional Director of the B.B.C. Bouquets were presented to Mrs. Jackman, Mrs. Wilson and Mrs. Edgar. Amongst those present were Mr. H. Bishop, chief engineer of the B.B.C., London, Mr. O. Pawsey, representing the Radio Industries Club, London, Mr. C. F. Partridge, head of the Birmingham Technical College and Mr. W. S. Burge (C.E.B.).

Nearly 300 people attended the ladies' evening of the Radio Industries Club (Manchester Area) held at the Tudor Ballroom, Belle Vue, Manchester, on November 26th. Each lady received a gift. A large number of presents were given by wholesalers and manufacturers. The president, **Mr. V. H. C. Moore,** indicated that the proceeds of competitions held during the evening (£31 10s.) would probably be made up to 50 guineas by the Club, and divided between the E.I.B.A. and the Radio Retailers' Benevolent Fund.

Following the success of the recent Radio Industries Ball at the Royal Albert Hall on October 3rd, the Committee of the Radio Industries Club has decided that this shall be an annual event under the auspices of the Club.

Obituary

Mr. G. W. F. Horner.—The death is reported of Mr. George William Farmsby Horner, A.M.I.Mech.E., which occurred on November 24th at Middleton-on-Sea, at the age of sixty-nine. Mr. Horner was senior area engineer, Twickenham and District, London & Home Counties J.E.A., and reached the retiring age in 1943. He continued in the service of the Authority, however, on a temporary basis.

Mr. H. Wilkinson.—The death occurred on November 28th at Hyde, Ches., at the age of sixty-five, of Mr. Haddon Wilkinson, formerly chief boiler engineer to the British Engine, Boiler & Electrical Insurance Co.

Mr. Edward Todd who, until his retirement some two years ago, was district manager with the Cornwall Electric Power Co., has died at the age of sixty-two at his home at Redruth, Cornwall.

Wills.—Mr. S. L. Brunton, formerly a director of Joseph Sankey & Sons, Ltd., left £6,443 (net personalty £6,388).

Mr. C. Linnell, electrical engineer and contractor, of Wolstanton and Burslem, Staffs, left £2,857 (net personalty £2,242).

Rio Underground Railway Scheme

PROPOSALS have been put forward for the construction of an underground railway in Rio de Janeiro. The cost of the first part of the extensive underground network, which would eventually link the principal points of Rio city, is put at 2,050 million cruzeiros (about £25 million) for construction of the first 50 km of track and 1,470 million cruzeiros (£18 million) for rolling stock and permanent fixtures, the greater part of which would have to be imported.

Although the plans were submitted by the Brazilian Traction, Light & Power Co., it is understood that the scheme would not be financed by private enterprise. The capital would be raised from public funds and special taxation. The formation of a public-owned company resulting from the amalgamation of all existing transport companies which would be known as "Empresa Unica Nacional" is also proposed. The company would operate the underground and all collective transport in the Federal District.—*Reuter's Trade Service.*

City of Birmingham Handbook

THE first post-war edition of the City of Birmingham Handbook has been issued by the City's Information Department, price 2s. 6d. or 3s. post free. This fully describes the varied municipal activities. The first chapter traces the history of Birmingham from the time of Doomsday Book and subsequent chapters give an insight into the civic administration of Birmingham to-day. There are interesting chapters on the City's electricity supply undertaking and the road passenger transport system.

Batti-Wallahs' Luncheon

SIR ARNOLD GRIDLEY, M.P., was the principal guest at a luncheon given by the Batti-Wallahs' Society on November 27th and presided over by Col. H. J. Wellingham. Sir Arnold is president of the British Chamber of Commerce, a constituent of the International Chamber of Commerce having a consultative status with U.N.O., and in his address he dealt with dangers to production in nationalization.

After referring to the development of Great Britain under a system of private enterprise, he pointed out that the United States with a similar system was alone able to provide aid for the reconstruction of Europe. Like that of the U.S.S.R. its economic system was a closed one, however, while Great Britain depended upon exports to survive. Handicaps to production under too rigid Government control were delays in reaching decisions, dangers in monopoly, subsidizing of trading losses by taxpayers instead of by groups of shareholders, loss of incentive to employees with diminished opportunities of choosing jobs and for whom they would work, and inability to secure information regarding State-owned concerns by questions in Parliament without necessitating interference in their working by the responsible Ministers. The loss of competition between gas and electricity, he feared, would result in lowered efficiency in both services.

New Zealand Electrical Trade

THE United Kingdom Manufacturers' and New Zealand Representatives' Association in its annual report for the year ended June 30th, 1947, recorded that a considerable proportion of the trade in electrical equipment had been placed with United Kingdom manufacturers, which, it added, might be taken as an indication of the ability and capacity of the United Kingdom to execute the orders placed by the Dominion.

A survey of this market indicates that the demand for heavy electrical equipment is likely to be maintained. Future orders may largely emanate from Government Departments for equipment required mainly in connection with the extensive hydro-electric construction programme envisaged by the New Zealand Government through the State Hydro-Electric Department. The industrial expansion and the domestic demand for power are also being maintained, but full satisfaction of this demand will be retarded until the capacity of the generating stations has been materially increased.

The report says further that for v.i.r. cables and flex the U.K. manufacturers had fulfilled substantial orders during the period under review, and this could be taken as a definite indication of the manufacturers' ability to meet the requirements of that market and re-establish the position which they enjoyed before the war.

Under the New Zealand Government import selection policy, a N.Z. manufacturer has secured a very substantial measure of protection for certain small sizes of flexibles and radio cable. The Association, in co-operation with local representatives of the C.M.A., announces that it will take appropriate action, when the time is opportune, to limit the extent of this protection.

Commissioners' Statistics

A RETURN of Engineering and Financial Statistics relating to authorized undertakings in Great Britain for 1943-44 has been issued by the Electricity Commission (Stationery Office, £1 1s. net). In this Return, particulars are given in alphabetical order, as in previous volumes, of each publicly owned undertaking for the twelve months ending March 31st (in Scotland, May 15th) and of each company for the twelve months ending December 31st.

Under different headings are given such details as system of supply, kW of generating plant installed, maximum demand, load factor, kWh generated or purchased in bulk, kWh sold (subdivided into classes) and number of consumers. Financial statistics include capital raised and expended, revenue from different classes of consumers and other sources, working costs under various headings, gross surplus and its appropriation. The principal features and figures revealed by the Return are summarized in tables and explanatory text.

Correspondence

Letters should bear the writers' names and addresses, not necessarily for publication. Responsibility cannot be accepted for correspondents' opinions.

Electrically Propelled Vessels

AS one who is connected with the maintenance of marine electrical equipment I feel that attention should be drawn to an important aspect of turbo-electrically propelled ships, of which fifty or more have been bought from the American Mercantile Marine by various shipping firms in this country.

The amount of electrical knowledge required for the satisfactory running of these vessels is generally beyond that possessed by engineer officers, and the time has come when a responsible authority like the Board of Trade should issue a certificate similar to that awarded to marine engineers. The result would be to raise the standard of electrical knowledge in the shipping world with obvious saving to the shipping companies, as under present conditions a little knowledge may be dangerous J. E. W.

Recovery in Malaya

Rehabilitation of Generating Plant

THE first report of the Electricity Department of the Malayan Union which we have received since the Japanese occupation is an interesting document with illustrations showing damage to plant. Much of this damage was done before the British evacuation as part of a deliberate policy, and further disorganization and deterioration took place during the occupation. Plans drawn up by the Malayan Planning Unit in London for the administration of the electrical services were put into effect under the British Military Administration in September, 1945. On the return of the Civil Government on April 1st, 1946, all private and municipal supplies were taken over by their respective companies and municipalities, with the exception of Malacca.

The report of the Director of Electricity, Mr. F. P. Egerton, M.I.E.E., for 1946, therefore covers a period of struggle against complex problems as the aftermath of war, intensified by shortages of material and labour. Invaluable assistance was rendered by the Royal Engineers in providing portable generating plant to supply many small towns pending the arrival of permanent plant from England. In the nine months to the end of the year 63·9 million kWh was generated or purchased by the Department compared with 129·3 million in the whole of 1940. Restrictions had consequently to be imposed in a number of areas and Malaya now faces a grave shortage of power. In 1939 it was estimated that with normal development the total kWh generated in the Union would approach 1,000 million by 1950, requiring about 190,000 kW of plant (excluding stand-by sets). When all available plant has been rehabilitated the effective capacity will be about 120,000 kW, much of it old and by modern standards inefficient. To meet the deficiency preliminary work has been started on a new thermal station at Connaught Bridge, near Klang, where 40,000 kW of the ultimate 80,000 kW should be operating by 1950. In addition, various hydro-electric schemes are being investigated in the Telom Valley.

A considerable part of the report is devoted to details of the destruction of plant and subsequent rehabilitation. At Kuala Lumpur, the largest station, the task of destruction was carried out by the station engineers without assistance from the military. The procedure for dealing with the boilers was to start the fans, increase the fires to maximum intensity, then open the blow downs and drain the water from the drums and tube banks. On two of the boilers the whole of the internal structure collapsed on to the stoker in an incandescent mass.

A financial statement gives the estimated cost of major rehabilitation repairs debited to revenue appropriation account as $749,240, of which repairs actually carried out in 1946 amounted to $134,671. The accounts for the nine months show a gross revenue of $4,379,248 and a surplus of $404,642. (Singapore dollar = 2s. 4d.)

Lancashire Contractors

Conference with L.E.P.

ON November 20th the Lancashire Electric Power Co. arranged a conference of contractors operating in its area of supply. Mr. O. Howarth, sales manager and chief technical engineer of the L.E.P., presided and, after welcoming the contractors, explained the position in regard to the national plant shortage and outlined the company's load spreading activities. He stressed the need for economy by the domestic user, particularly during the peak hours, and directed attention to a letter which was being distributed by Mr. M. H. Adams, chief engineer and manager of the company, to all the company's domestic consumers. He said that one of the directions in which the contractor could help to save electricity was by persuading the domestic consumer to lag hot water cylinders. The company was issuing a special letter in every case which came to light of unlagged hot water cylinders with immersion heaters. Stocks of fires were being reserved purely for new property and for cases of real need.

Lancashire contractors at an L.E.P. conference

There was an exchange of views on difficulties brought about by the shortage of installation materials and the need for a certain amount of improvisation. The testing of installations was dealt with, and contractors were urged to do their utmost to stock spare fuses in view of the large number of fused plugs being installed due to the extensive adoption of the ring main in new housing schemes. Mr. Howarth emphasized that the company's policy was to co-operate rather than to compete with the contractor. After the meeting the Central Electricity Board's new film "Prelude to Prosperity" was shown.

Future of the Railways

Operation Under Transport Commission

ON January 1st the four main-line railways together with various joint lines and small railways will be transferred to the British Transport Commission. The Commission, which will consist of Sir Cyril Hurcomb and five members, four full-time and one part-time, will be mainly concerned with policy, finance, rates and charges, supervision of research and co-ordination of inland transport.

Management and operation of British Railways will be the province of a Railway Executive of six full-time and two part-time members, each with special functional responsibilities, under the chairmanship of Sir Eustace Missenden. Engineering functions will be exercised by Mr. R. A. Riddles (mechanical and electrical engineering) and Mr. J. C. L. Train (civil engineering and signalling).

Each of the six regions now formed will be administered by a chief officer. He will co-ordinate the work of functional regional officers, who will in regard to their special spheres be directed by appropriate members of the executive.

The British railway system has 52,000 miles of track, 20,000 locomotives, 40,000 carriages and over 60,000 wagons; a further 60,000 privately owned wagons will be taken over by the Commission. Its trains, running 373 million miles a year, carry more than 1,200 million passengers. It also carries 226 million tons of merchandise annually, more than half of which is coal. The staff numbers 635,000.

Rand Mining Equipment

Winder Reduction Gear

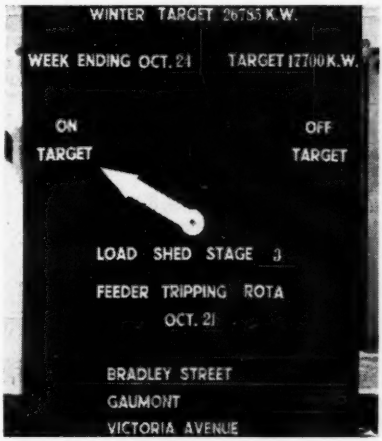
TOTALLY-enclosed two pinion helical reduction gear made by David Brown & Sons (Huddersfield), Ltd., to the order of Rand Mines, Ltd., is now being installed as part of a new 8-ton electric winder at the Blyvooruitzicht mine in South Africa. The two motors that will drive through this gearing are rated at 1,630 h.p. at 370 r.p.m. and are capable of exerting a maximum torque equal to 3,260 h.p., the normal working peak being about 2,700 h.p. The gears are arranged in the same horizontal plane, two pinions meshing with a central wheel at 131·46 in. (329·3 centimetres) centre distance between pinions. Each pinion has 39 teeth and the wheel 268, the working face width being 24·5 in. (62·23 cm). The pinions are of 0·5/0·6 per cent carbon forged steel solid on the shaft, but the wheel is composed of 0·35/0·45 per cent carbon forged steel rim shrunk on a cast iron centre with split boss and shrink rings. The bearings consist of cast iron shells lined with white metal and have oil rings, the whole supported on cast iron pedestals with joggle keys to maintain the alignment of the shafts. Lubrication is by a David Brown helical rotor pump flange-mounted on to a high speed shaft end-cover and driven from the shaft; an oil strainer between the pump and distributor has sprays so disposed as to cover the full face width of the gears at the points of engagement. Oil flow indicators are provided and the distributors have pressure gauges.

The gearcase and bedplate of the equipment were fabricated by welding.

Maximum-Demand Target

Indication of Load Conditions

IN order to give an immediate idea of load conditions to charge engineers as they come on shift, the load-shed indicator board illustrated has been introduced by the Southend-on-Sea undertaking. The figure 26,785 kW opposite "winter target" shows the maximum load permitted during "target" operation, when 100 per cent of the country's generating plant is available; this figure is expected in mid-winter. The weekly target, a percentage of the



Southend-on-Sea load-shed indicator board

winter target, is stipulated by the Central Electricity Board according to the plant actually available. The arrow indicates whether the station is "on target," i.e., is expected to keep within the weekly target, or "off target," i.e., on unrestricted running. Load shedding in 5 per cent stages may also be necessary, and the board indicates that three stages have been shed. The feeder-tripping rota is altered daily in accordance with a pre-arranged calendar, any feeders tripped being indicated by an "open" tablet. Mr. R. C. Golding, borough electrical engineer and manager, states that the method has proved of value in avoiding troubling engineers with questions at critical moments.

PARLIAMENTARY NEWS

By Our Special Reporter

ON the third reading of the Emergency Laws (Miscellaneous Provisions) Bill in the House of Commons last week, Mr. Manningham-Buller asked for an explanation of Defence Regulation 16, which, he said, enabled the Minister of Fuel and Power to make orders for the closing up of highways, including footpaths, for the purpose of open-cast mining and the erection of electricity generating stations. He felt that anything of that kind should be done under the powers contained in the Town and Country Planning Act, 1947.

Mr. Younger, the Under Secretary, Home Office, said that this regulation was required for urgent purposes. Under the Town and Country Planning Act, 1947, the procedure governing the stopping up of a highway could not be used where the matter had to be done rapidly. The Home Secretary was prepared to look at the question of the permanent stopping up of highways in connection with generating stations, and, if necessary, to put down some amendment for consideration in the House of Lords. The Home Secretary felt that, in cases where it was intending that a temporary stopping up should become permanent, there was no objection to using the normal procedure under the Town and Country Planning Act or the old procedure of Quarter Sessions, and he was always prepared to see that that was done.

Stoke-on-Trent Sign Prosecution

Mr. Erroll asked the Minister of Fuel and Power how much time and how much in salaries and expenses were incurred by inspectors of his department investigating an electric advertising sign used by Zip French Cleaners, Ltd., of Stoke-on-Trent, which was estimated to use 2½ oz of coal a year, and Mr. Orr-Ewing asked how many solicitors, counsel and officials employed by his department attended the hearing of the Action against this company at Stoke-on-Trent on November 21st; what was the total cost of this action falling on the Ministry; and what was the accusation against the defendants.

Mr. Gaitskell said that a solicitor and two inspectors employed by his Department attended the hearing, and the preliminary inquiry involved two short visits to the premises concerned and an interview with a director. The legal costs of the prosecution would amount to about £15; it was impracticable to estimate the cost of the very small proportion of the time of those officers who were concerned in the routine inquiries. The charge against the defendants was one of unlawful use of fuel—namely, electricity—for the purpose of advertisement in the course of their business, contrary to Article 5 of the Control of Fuel (No. 3) Order, 1942. Proceedings were taken as a result of the refusal of the defendants to comply with a request to discontinue the use of the sign. The offence was proved, but the case was dismissed under the Probation of Offenders Act.

Water Power

Replying to Mr. Byers, Mr. Gaitskell, Minister of Fuel and Power, said that the generating capacity now in course of development from water power was 400,000 kW. The estimated cost of construction was £19 million and the estimated average annual output was 802 million kWh. Additional capacity estimated at 400,000 kW had been surveyed, but was not yet being developed. Estimates in respect of 308,000 kW of this showed a construction cost of £15·5 million (at 1944 prices) and an average annual output of 520 million kWh. It was estimated that the Severn Barrage Scheme would cost £47 million (at 1944 prices) and would provide an average annual output of over 2,000 million kWh.

Power Plant Cuts

Sir Arnold Gridley asked the Minister of Fuel and Power to what extent a cut had been made of additional generating plant capacity originally intended to become available to meet the anticipated load in the years 1950, 1951 and 1952; whether the cut had the approval of the Central Electricity Board and the Electricity Commissioners; and to what extent, if the cut was insisted upon, the shortage of generating plant capacity would continue for the next five years, having regard to the best estimates made of future demands.

Mr. Gaitskell said he must ask the hon. member to await the White Paper on the capital investment programme, which was to be published in the next few days.

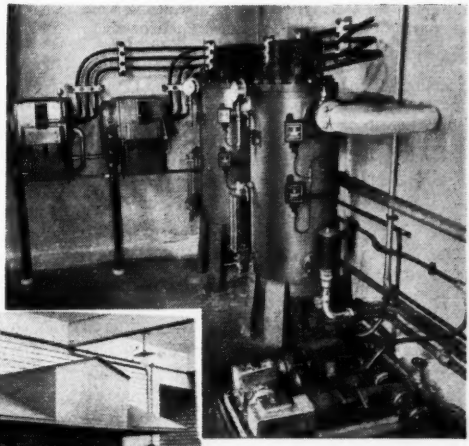
Returned Exported Goods

GOODS manufactured or produced in the United Kingdom and returned after being exported to sterling area countries have hitherto been allowed in without an import licence. The Board of Trade announces that this concession has now been withdrawn with the exception of goods returned to the sender by parcel post from the sterling area. Separate import licences are now required for all other imports of returned goods unless they are on the open general licence list. The application for import licence should give full details of the reasons why the goods have to be re-imported. Goods will, however, be admitted without import licence if the Commissioners of Customs and Excise are satisfied that they were dispatched to the United Kingdom before November 26th, 1947, and re-imported before December 17th, 1947.

Electrode Boiler Installation

Steam for Tripe Dressing

WHAT is believed to be the first use of electrode steam boilers to provide the heat requirements for the dressing of tripe is now being undertaken with complete success at Burslem, Stoke-on-Trent, where Messrs. Copestick & Stockton have recently had installed two "No. 320" Bastian & Allen fully-automatic electrode steam boilers, each rated at 150 kW on a 415-V, three-phase supply. Steam is required to heat eight steam-jacketed boiling pans, each having a capacity of 50 gallons. When the equipment is started up both boilers are brought into use but as soon as the contents of the pans reach boiling point, one of the boilers is quite sufficient to maintain the temperature and to provide steam for the scalding tank.



Eight steam-heated boiling pans and a scalding tank are served by the two 150-kW Bastian & Allen electrode boilers shown above

The equipment is completely automatic and controlled at a pressure of 60 lb per sq in. There are two pressure regulators on each boiler. As the steam demand lessens the pressure increases and one regulator operates to trip out the feed pump and the other to energize the magnetic valve. This releases water from the boiler to the feed tank and reduces the electrical load while maintaining the steam pressure until the demand increases. Pipework between the boilers and feed pumps is so arranged that when only one boiler is in operation either pump can be used.

Local switching is by means of an oil circuit breaker of J. G. Statter manufacture which is fitted with under-voltage and instantaneous overload releases. The main supply to the buildings is controlled by a 600-A Metrovick intake cubicle feeding main switchboard of English Electric manufacture.

Mrs. Copestick, who runs the establishment, is well satisfied with the plant from the point of view of performance, running costs and simplicity of operation. Recently, within one week some 500 tripes, each weighing approximately 30 lb, were dealt with without any difficulty, and when supplies improve they will be able to handle at least 200 tripes per day.

The supply is provided by the Stoke-on-Trent Corporation Electricity Department, whose general manager, Captain Thomas Lockett, kindly arranged for us to inspect the plant.

Licensing in Western Australia

NEW regulations which came into force in Western Australia recently provide that all who do electrical work (except linesmen and cable jointers) must be licensed; all who operate 16 mm or smaller projectors in public buildings must have a permit; radio workers must be licensed (those unable to prove efficiency must qualify by examination); and contractors must also be licensed before carrying out any work on a contract basis.

Overseas Telephony

London Exchange Moves to Larger Premises

IN five weeks' time the " Overseas " telephone exchange of the General Post Office will celebrate its coming of age. When the first public radio-telephone call was made between London and New York on January 7th, 1927, the special switchboard then used and others employed for calls to countries in Europe were ust parts of one of the usual switchrooms in the Faraday Building in Queen Victoria Street.

The growth of international telephony necessitated the establishment in 1932 of a separate switchroom, still in the Faraday Building, for calls abroad and not long after the resumption of those services in 1945 the " International " had to be divided into " Continental " and " Overseas " switchrooms. The last mentioned has now been elbowed out entirely, to make room for the Continental and inland trunk services; so last week a new " Overseas " exchange came into operation on the sixth floor of the G.P.O. building in Wood Street, E.C.1, the only premises now standing in that street, which formerly housed the Metropolitan, National and London Wall exchanges before they were burnt out during the memorable night of December 29th, 1940.

The new " Overseas " switchroom deals with calls to and from fifty-five countries as well as ships on transatlantic passage, outgoing by radio from Rugby or Criggion and incoming through receivers at Cupar, Fife, at Baldock, Herts, or on the Cooling Marshes in Kent. Average weekly calls number 574 outgoing and 698 incoming from the United States, 45 (71) Australia, 74 (70) Egypt, 20 (22) Argentina, 72 (95) India, 128 (169) South Africa and the Rhodesias, and 36 (70) ships.

Indirect Export Materials

IN a statement last week Sir Stafford Cripps explained the position with regard to supplies of materials to manufacturers whose products form part of exported goods. He said that direct exporters were told what proportions of their production were to go abroad and how much could be supplied to the home market. As regards the latter the Government would already have taken account of the part that the home use of the product played indirectly in the export drive and other essential production.

Materials were allocated accordingly but that method of control could not apply to anything but " end-products." For components and common service items such as ball bearings, electric motors, etc., which were incorporated in a number of end-products both for export and essential home use, material allocations would be determined by the Government's assessment, not of direct or indirect exports, but of the level of supplies necessary to meet the variety of programmes which would be controlled at the end-product stage. In a similar way, control as it affected sub-contractors would be through the end-product. If the main contractor was able to back his orders with material sub-allocations to the sub-contractor, the latter might assume that he was working to an approved programme, but if the manufacturer of the end-product failed to achieve his export programme, the sub-contractor might suffer.

In this, as in other fields, the reliability of the main contractor was one of the normal commercial risks which the sub-contractor must take. But in assessing that risk it would be of little value to the sub-contractor to have figures of the current proportion or value of the export sales of the manufacturer of the end-product. Figures of that kind might, and very often would be, quite misleading as to the manner in which the exporter's programme was being carried out. The Government did not want to encourage unnecessary development of a system of returns within industry.

Steelworks Film

ON Thursday last week we saw in London a film made for Richard Thomas & Baldwins, Ltd., (" Pattern for Progress ") of the methods adopted for making steel sheet and tinplate at their Ebbw Vale works. It is an ambitious venture taking a little over three-quarters of an hour to show and depicts the complete processes of making steel sheet and tinplate from the basic materials to the finished article. The film opens with an animated sequence which gives a complete thumbnail sketch of the processes. Then, commencing at the marshalling yards, it proceeds to the coke ovens, the blast furnaces, the melting shop (showing Bessemer and open hearth processes), the hot mill, the cold reduction mill, Melingriffith tinning, assorting bay, and electrolytic tinning, and concludes with packing and dispatch.

The film was made during actual working hours and vividly portrays the processes involved and the skill and scientific care in production. Electric drive is used extensively throughout the works and some excellent views of the power plant and electric motors are included. The commentary is lucidly given by Mr. C. Lloyd (shift foreman in the Hot Mill at Ebbw Vale Works), and the script and production were by Mr. D. H. Riley (Technique Film Productions, Ltd.). The film will be released to libraries, etc., on December 10th.

Electrical Fitter Killed

An electrical fitter, Samuel Edward Clarke, aged thirty-eight, received a shock at 5,200 V while testing apparatus at a Northwich substation of the Mid-Cheshire Electricity Supply Co. and was killed almost instantaneously. A verdict of " Accidental death " was recorded at the inquest.

RECENT INTRODUCTIONS

Notes on New Electrical and Allied Products

Rechargeable Handlamp

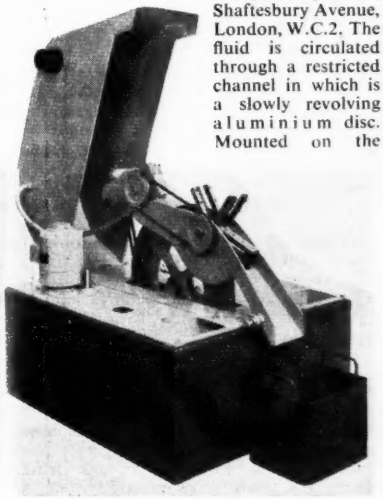
THE "Mastlite," a rechargeable battery handlamp for watchmen and similar uses, is announced by RUNBAKEN PRODUCTS, 71, Oxford Road, Manchester, 1. The standard model has a built-in rectifying charger with indicating meter, so that it can be plugged into a.c. mains, but other models are available for d.c. charging or operation from motor vehicle circuits.

Lighting Vertical Surfaces

A fluorescent fitting specially designed for the illumination of vertical surfaces is announced by the BRITISH THOMSON-HOUSTON CO., LTD., Bridle Path, Watford, Herts. A single 80-W, 5-ft tube is accommodated in an anodized aluminium reflector, the profile of which directs most of the light within an angle of 90 degrees for the lighting of control panels, demonstration charts, schoolroom blackboards and maps, art exhibits and display lighting.

Magnetic Clarifier

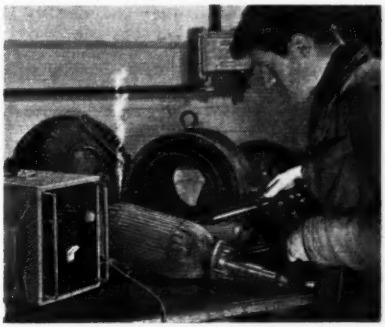
Exclusive manufacturing and marketing rights of the Scrivenor clarifier for removing fine ferrous swarf and abrasive grit from the cooling fluid used in grinders and other machine tools have been acquired by PHILIPS ELECTRICAL, LTD., Century House, Shaftesbury Avenue, London, W.C.2. The fluid is circulated through a restricted channel in which is a slowly revolving aluminium disc. Mounted on the disc are a number of small, but powerful, magnets which attract the solid particles and carry them upward to be removed by revolving wiper arms. A small motor drives the disc and wiper and another the circulating pump.



Magnetic coolant clarifier for machine tools, with hood raised

Flash Tester

An insulation flash tester for workshops undertaking repairs and reconditioning is available from GRESHAM TRANSFORMERS, LTD., Twickenham Road, Hanworth, Middx. It is small enough to be carried about; it is mains operated and delivers output voltages of from 500 to 2,500, variable by a five-range rotary switch on the front panel. Provision is made for sustaining the current at a safe value when it is desired to burn out the fault to indicate its position, as illustrated, when testing motor armatures.



Variable voltage flash tester

Current-limiting resistances and an overload circuit breaker are incorporated as well as blue and red pilot indicator lamps. The shielded testing prods are of the retractable type, the electrodes being exposed only when the insulating handles are gripped.

Fan Regulators

Two kinds of regulator for a.c. propeller fans, made by Woods, of Colchester, Ltd., have been introduced by the GENERAL ELECTRIC CO., LTD., Magnet House, Kingsway, London, W.C.2. Both the series-choke and auto-transformer types provide 40 per cent downward speed regulation with either four or five running speeds and a snap-action "off" position. They are of small size, since they produce less heat than resistance regulators. Ventilating slots, hardly discernible, are provided at the top and bottom of the enclosing case.

NEW BOOKS

Mechanical Handling Equipment. First and Second Year Mathematics.

Conveyors and Cranes. By W. H. Atherton, M.Sc., M.I.Mech.E. Pp. 357; figs. 234; index. Sir Isaac Pitman & Sons, Ltd., Parker Street, Kingsway, London, W.C.2. Price 25s.

This book is mostly descriptive of mechanical handling equipment in its very numerous forms, and is not too sketchy considering its moderate size in relation to the extensiveness of the subject. It is easy to read and is divided into three parts. The first quarter describes many kinds of conveyors, elevators and stackers for goods in package form, including bags, baskets and boxes. The middle two quarters are concerned with the handling of loose materials in bulk, with a section on the mechanical and pneumatic elevation of grain and another on the pneumatic conveying of coal, ashes and cement.

Tables and graphs are provided; also capacity and power formulæ, worked examples relating to various types of conveyors, with such useful information as speeds of belts for various materials, details of supporting idlers, their spacing, size, inclination, type and kind of bearing and how they are to be lubricated: durability of belts, with carrying capacities, suitable widths and weights, are all discussed in a straightforward and concise manner that will be of value to those who have to select equipment and maintain it.

The last quarter of the book considers several important classes of cranes used in heavy workshops, in shipbuilding yards, on dock quays and in railway goods yards; twelve lines are spared for their driving motors and controllers! Electric telphers and ship hoists receive brief attention. Various types of mobile cranes of different lifting capacity and recent developments in this particular field are discussed and the types of work to which they are particularly suited. But the book is in no sense a catalogue. Parts of some chapters are based on papers which the author has read before engineering societies and on various articles contributed to *Mechanical Handling*.—P.J.J.

Preliminary Mathematics. By W. S. Ibbetson, B.Sc., A.M.I.E.E., M.I.Mar.E. Pp. 175; figs. 40; index. E. & F. N. Spon, Ltd., 57, Haymarket, London, S.W.1. Price 6s. 6d.

The subtitle of this book explains that it is "suitable for students in all kinds of engineering, installation work, telegraphy and telephony, excluding the calculus."

In his preface the author maintains that there is no short cut to a true knowledge of mathematics and that the idea of "practical mathematics," devised to avoid learning basic principles is a complete failure.

One is bound to admit that most teachers would agree with Mr. Ibbetson. Any attempt to train students in technical subjects without a thorough grounding in fundamental mathematical processes results in a despairing battle for teacher and student. It is only fair to the student embarking on such a course to present him with a carefully worked out survey of these basic ideas with the assurance that they are the necessary and sufficient foundation stones for all further engineering mathematics.

This is the book which Mr. Ibbetson has set out to write for first and second year students of mathematics in electrical, mechanical, installation or telephone courses, or for those who wish to "refresh."

The five chapters on arithmetic deal with fractions, decimals, ratios, percentages, powers, roots and simple graphs; then there are two chapters on algebra up to indices and logarithms, with others on mensuration, the slide rule and the absolute elements of trigonometry.

In my opinion this little book of 170 smallish pages admirably serves its purpose; though simple the exercises are mostly technical. The only criticisms one might make are minor. Since indices are the very basis of mathematics, could not negative and fractional indices have been mentioned more specifically? (The zero index is alluded to almost in an aside.)

The slide rule chapter is concise and excellent; and the page on fixing the decimal point will be most appreciated by the novice. There are logarithm and trigonometric tables at the end and a complete set of answers.—F.G.G.A.M.

Fundamentals of Electricity. By W. H. Johnson, Ph.D., and L. V. Newkirk, Ph.D. Pp. 212; figs. 207 with index. Macmillan & Co., Ltd., St. Martin's Street, London, W.C.2. Price 6s. 6d.

This textbook, in very clear type with large illustrations, was first published in America four years ago. It was prepared at the request of the War Department and the U.S. Office of Education as an official pre-induction training course outline (No. PIT.101) in accordance with specific Army requirements. Its main object is to develop manipulative and operational skill, which are basic to military specialization.

The method of presenting the information allows for seventy-six periods of directed demonstration-discussion, nine periods of laboratory exercises and five periods of review and testing. Each of the thirteen chapters very briefly outlines theory, suggests teacher-demonstrations, experiments and materials needed for them, gives practical exercises to enable the student to test his understanding of the theory, and ends with a summary, lists of questions and problems and a bibliography.—W.O.F.

COMMERCE and INDUSTRY

Bankside Plans Approved. E.D.A. Cooker Specification.

AT last Tuesday's meeting of the London County Council the Town Planning Committee reported its approval of the plans submitted for the proposed power station of the City of London Electric Lighting Co. at Bankside, Southwark. The drawings show a building height of 88 ft to the parapet and a 285-ft chimney.

In a report to the Minister of Town and Country Planning, the Royal Fine Arts Commission states that it has no critical observations to offer regarding the design of the station but it regrets that the siting of the station is a departure in some respects from the principle put forward by the Commission. It is considered that the position is inappropriate for a large public utility structure and the decision to place the station at Bankside was one which "struck at the roots of good zoning and town planning principles."

The L.C.C. Committee says that its approval is given without prejudice to any action which the Council may take regarding the prevention of atmospheric pollution, noise and vibration, matters which will be considered in due course.

Flameproof Testing Fees Raised

The Minister of Fuel and Power announces that in consequence of the increase in the operational costs of maintaining the service for the testing and certification of flameproof enclosure of electrical apparatus, the scale of fees for testing and certification set out in Appendix VII of Testing Memorandum No. 4 (1946) will be subject to a 50 per cent increase as from January 1st, 1948.

Cable Makers' Wages

The Joint Industrial Council for the Electrical Cable Making Industry has accepted the principle of establishing complete consolidation of current basic rates with current cost-of-living bonuses and war advances, in respect of both timeworkers and pieceworkers; and within the pieceworkers' consolidated rate a lower rate, to be known as the operative base rate, for the purpose of calculating piecework prices. The full schedules of consolidated rates were agreed as an interim measure pending an immediate and complete examination of the entire wages structure of the cable making industry, and to operate as from the third pay day in December, in respect of the period for which payment is made on that day.

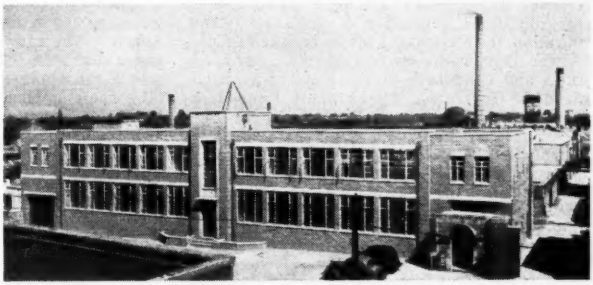
It was also agreed that piecework prices or times should only be altered where they did not permit the worker of average ability to attain the earnings mentioned in the schedules; where piecework prices or times yield earnings were equal to or in excess of those mentioned in the schedules they should not be disturbed; and the "full-back" or guaranteed rate of the pieceworker should be the timeworker's minimum rate

J. H. Tucker & Co.'s New Premises

In 1940 German bombers almost completely destroyed the electrical accessories works of J. H. Tucker & Co., Ltd., Kings Road, Tyseley, Birmingham, and production had to be carried on in garages, sheds and requisitioned premises as widely separated as Minworth, Aberystwyth and Bridgend. On November 22nd (the seventh anniversary of the destruction) a new works and administrative block, built on the same site, was formally opened by the Lord Mayor and Lady Mayoress of Birmingham, Councillor and Mrs. J. C. Burman, a bronze plaque being unveiled to commemorate the occasion.

Before the ceremony a number of the older employees and distinguished visitors were presented. Despite the dispersal of four-fifths of the labour force in November, 1940, there were still forty-four employees who had been in the employ of the firm for twenty-five years or over, with a combined total service of over 1,000 years. The Lord Mayor referred to those ex-employees, who had since reached positions of eminence in various branches of the electrical industry.

Grateful acknowledgment was also made of the help received from competitive firms during



New factory of J. H. Tucker & Co., replacing premises destroyed in an air-raid

the difficult days of 1940-1941. Mr. P. Good, President of the I.E.E. and director of the British Standards Institution, mentioned the high standard of the company's products. After the ceremony the company entertained visitors and friends in the works canteen, the evening including dancing and cabaret.

Companies Act, 1947

The Board of Trade has made an Order (S.R. & O. 1947, No. 2503) under Section 123 of the Companies Act, 1947, bringing into force as from December 1st, certain provisions set out in a schedule. These provisions include those conferring additional powers on the Board of Trade in respect of investigation into the affairs of companies and the ownership of shares; prohibiting the registration of companies by undesirable names; and making it easier to alter memoranda of association.

The Order also brings into force all the provisions of the Companies Act amending the Registration of Business Names Act, 1916, including that empowering the Registrar of Business Names to refuse to register any name which he considers undesirable.

The President of the Board of Trade has stated in a written Parliamentary reply that the requirements of the Act relating to companies' accounts will be put into full operation on July 1st next year. In the meantime he hopes that companies will comply with these provisions voluntarily as soon as possible.

Plant for Aswan Dam

The Egyptian Ministry of Public Works is now inviting tenders for the supply and erection of mechanical and electrical equipment for the diesel generating station and water filtration and ice-making plants required for the Aswan Dam hydro-electric scheme. Specifications and conditions of contract are available from the Government's consultants, Kennedy & Donkin, 12 Caxton Street, S.W.1.

According to the newspaper *Svenska Dagbladet*, the Swedish concerns, A.S.E.A. and Karlstad Mekaniska Verkstad have accepted orders from the Egyptian Government for generators, transformers and turbines to equip the hydro-electric station. The orders are valued at 30 million kronor.

Government Electro-Medical Supplies

Under the Transfer of Functions (Medical Supplies) Order, 1947 (S.R. & O. 1947 No. 2472, H.M. Stationery Office, 1d.) the Ministry of Health will take over from the Ministry of Supply, as from December 1st, general responsibility for purchasing medical supplies to meet Government requirements. From that date all correspondence formerly addressed to the Directorate of Medical Supplies should be sent to the Secretary, Ministry of Health, Whitehall, S.W.1. A schedule to the Order shows that among the supplies affected are laboratory porcelain, apparatus and equipment; scientific glassware; and medical and surgical instruments, appliances and apparatus, including optical, X-ray and electro-therapeutic equipment.

Yorkshire Switchgear Extensions

The Yorkshire Switchgear & Engineering Co., Ltd., Leeds, with contracts in hand totalling well over £500,000 has acquired two additional factories in the Leeds area. Mr. George Caton, recently-appointed general manager of the company, informs us that one of the works, a two-storey building in Crimbles Street, Leeds, will be used for almost the whole of the company's steel fabrication. The other factory, used during the war for Ministry of Aircraft Production work, is at Laneside Mills, Churwell, near Leeds. It is at present being used for finishing and final inspection, but in due course production will start there too. The company employs about 300 in Leeds, and a further 150 at a subsidiary concern, Electro Mechanical, Ltd., Scarborough.

Minister at Reyrolle Works

Speaking at the conclusion of a tour of the works of A. Reyrolle & Co., Ltd., Mr. Jack Jones, Joint Parliamentary Secretary to the Ministry of Supply, paid a tribute to the company's high standards of production. The company has export orders on hand valued at over £2,000,000.

Purchase Tax on Projector Lamps

The Customs and Excise Authorities have decided that purchase tax on projector lamps shall now be the same as for other lamps with tungsten filaments, i.e., taxable up to and including 250 W instead of up to and including 750 W. The rate of tax on tungsten filament lamps has been increased from 33⅓ to 50 per cent of the wholesale value. The current rate of tax, where applicable, on projector lamps is therefore chargeable to the trade at 39 per cent of the list price.

Exports to Eire

The British Railways draw the attention of exporters of goods to Eire to a number of requirements which have to be met. The carrying company's combined declaration and consignment note must be completed in duplicate and signed by the sender or his representative. All goods liable to *ad valorem* rates of duty must be accompanied by the sender's invoice or a copy of it and a clear indication must be given of the contents of each package either by detailing them on the invoice or by supplying a separate packing list. In most cases a certificate of origin is required particulars of which can be obtained from the sending station. There are packing regulations which prohibit the use of hay and peat moss litter; disinfected straw may be used.

Export licences are needed for a large number of articles; these are issued by the Board of Trade Export Licensing Department, Stafford House, King William Street, E.C.4. Several classes are subject to import licensing by the Eireann Government.

E.D.A. Cooker Purchasing Specification

The British Electrical Development Association has produced a new edition of the pre-war Purchasing Specification for Domestic Electric Cookers, which is recommended to supply authorities having to issue a specification in connection with advertisements inviting tenders for this type of appliance. The new specification contains the latest E.D.A. recommendations in regard to the earthing of cooker parts and the calibration of oven thermostats and it requires compliance with the E.D.A. interchangeability specification. The object of the specification is to promote the purchase of standard types of cookers as made by reputable manufacturers and the E.D.A. Cooking Sub-Committee deprecates any departure from or addition to the specification on the ground that such variations must increase the manufacturing cost of the manufacturers' standard types. Copies of the specification are available free of charge from the Association, 2, Savoy Hill, W.C.2, for issue to prospective tenderers.

Overseas Machinery Markets

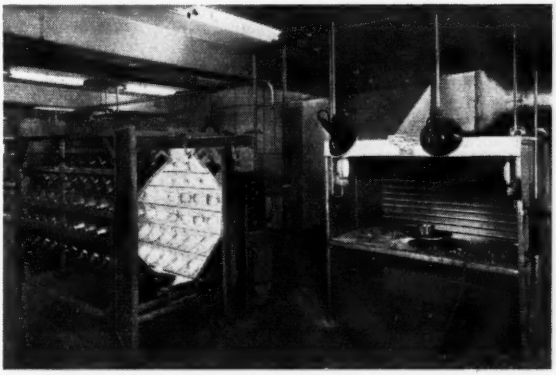
Machine Shop Magazine, a publication in the Associated Iliffe group, is publishing a series of articles spread over several issues which provide much useful information for machinery exporters. The November number analyses the implications of the Marshall plan and indicates Europe's probable requirements of plant and equipment. Previous articles in this series have dealt with the Government's export policy as applied to machinery and machine tools, and have described the import controls operating in many countries.

Municipal Radio Sales

Oldham Electricity Committee has decided not to participate in an allocation of 250 radiograms offered for sale by Seymour Products under the scheme promoted by the Committee of Local Authorities on Radio and Television An official of the Town Clerk's Department pointed out that if a purchase was contemplated, it would be as well to get the consent of the Electricity Commissioners, because under the new Electricity Act, the new Authority had the power to disclaim any agreement entered into if it was not satisfied with the terms.

Infra-red Lamp Demonstrations

The Metropolitan-Vickers Electrical Co., Ltd., has recently established a special Infra-Red Electric Lamp Demonstration Department at 132/135, Long Acre, London, W.C.2. Four different types of plant are at present installed and tests can therefore be carried out on a very wide range of articles. The total load of these plants is 75 kW, and the installation includes a 6-ft spray booth and compressor unit. Infra-red lamp heating is becoming increasingly a very necessary feature on the production line and its application calls for the experienced infra-red engineer, whose knowledge ensures correct design, positioning of lamps, and efficient electrical and mechanical control. This department deals with many varied industrial requirements including paint stoving, moisture extraction and preheating.



M.-V. Infra-Red Electric Lamp Demonstration Department

Purchase Tax Tables

We have received from Edwards & Smith (London), Ltd., Drapers' Gardens, E.C.2, a copy of their purchase tax tables which show the tax at the four different rates for goods valued at from 3d. to £1,000. The tables are priced at 1s. 3d.

Street Lighting in Leeds

In 1946, when a separate Street Lighting Department was formed by Leeds Corporation, it was agreed that the Street Lighting Committee should proceed with the re-organization of the lighting of the city's thoroughfares. As part of this scheme a new installation in New York Road, one of the city's main traffic outlets, was recently switched on by the Lord Mayor and by the chairman of the Committee.

This comprises thirty-five G.E.C. diffractor lanterns housing "Osram" 400-W high-power mercury-vapour fluorescent lamps. These lanterns are mounted on concrete columns in a staggered layout, with post-top diffractor units located on centre islands every third span. Spacing is 120-ft.

The installation was completed under the supervision of Mr. L. A. Doxey, the street lighting engineer.

Damages Settlement

At Stafford Assizes last week before Mr. Justice Henn Collins, a settlement was announced in an action brought by Norman Anthony and John Edward Plant against the English Electric Co., Ltd., of Stafford, for damages in respect of personal injuries sustained in an accident on January 10th, 1945, at the defendants' works, where they were employed as armature winders.

Mr. W. H. Cartwright-Sharp, K.C. (for plaintiffs) said he had agreed a settlement with Mr. Gilbert Griffiths (for defendants). They both realized there were difficulties facing them, but had agreed to ask for judgment by consent, for £800 in the case of Anthony, and £1,000 in the case of Plant, with taxed costs in each case.

The Judge approved the settlement.

New Institute of Transport Branch

At a meeting of members of the Institute of Transport in the Reading area held on November 17th at the Town Hall, Reading, a resolution was carried approving the formation of a branch of the Metropolitan Section of the Institute for the members in the Reading area, and a committee was appointed to consider the steps to be taken and to bonvene a further meeting. Mr. W. J. Evans was appointed chairman of the Committee, and Mr. W. Kershaw hon. secretary. Before the meeting the members were entertained to tea by the Mayor, Ald. H. V. Kersley, after which Sir Lynden Macassey gave an address on "Transport and the Community."

British Electric Locomotive in Holland

The Netherlands Railways have now restored electric train services over approximately 350 route miles (563 kilometres) and it is intended to complete the electrification of all main lines, another 500 route miles (803 km), within a few years, for which a large number of electric locomotives and multiple-unit electric trains will be required. Early this year Dutch railway engineers were in England and discussed with the chief electrical engineer of the L.N.E.R. the design of the first mixed traffic electric locomotive of 1,850 h.p., which was completed in 1941 for the Manchester-Sheffield electrification scheme, work on which has now been resumed, and for which eighty-five locomotives of this type are needed. It was agreed that useful experience would be obtained if this locomotive could be run for extended trials on the Netherlands Railways, and the proposal was approved by the directors of the L.N.E.R. The locomotive was therefore transported to Holland in September and has just completed 10,000 miles (16,090 km) on the Netherlands Railways without any defect occurring while in service. At the present time this electric locomotive is running 400 miles (644 km) per day for five days each week, hauling passenger trains between Utrecht and Eindhoven, and with a load of 330 tons a speed of 62 m.p.h. (100 km.p.h.) is reached in four minutes and the maximum permitted speed of 65 m.p.h. (105 km.p.h.) in five minutes.

Trade Publications

General Electric Co., Ltd., Magnet House, Kingsway, London, W.C.2.—Priced catalogue (Section C) of 200 pages embracing every type of conduit with fittings and accessories. There are an alphabetical index; a 45-page section devoted to weights and dimensional drawings of all the principal conduit fittings; and tables for converting lengths and weights to their metric equivalents.

Simplex Electric Co., Ltd., Broadwell, Oldbury. —Folder showing price advances in conduits, fittings, switch- and fuse-gear, lighting and heating equipment and domestic appliances. Purchase tax arrangements are set out on the reverse of the folder.

Calendars

The 1948 calendar of British Brown-Boveri, Ltd., consists again of monthly sheets bearing beautiful photographic views of Switzerland and awakes further regrets at the existing travel restrictions.

Mr. Christopher Wade has again sent us an artistic calendar for 1948 which has a charming picture of a young lady on the cliffs with her dogs.

The calendar of the Northmet Power Co. has coloured pictures of some of the beauty spots in the company's rural area of supply. Each sheet shows the calendar for three months.

Brook Motors, Ltd., have produced a calendar with sheets showing two current months, the last and the succeeding months, each bearing an illustration of one of the company's machines.

Trade Announcements

The Manchester branch of **Electrical Components, Ltd.,** has removed to Acton Square, The Crescent, Salford, 5 (telephone: Pendleton 3261).

Frank Westerman (Wholesale), Ltd., informs us that Mr. R. T. Morrell has joined its staff as sales manager and buyer for the Industrial Electrical Department. Mr. Morrell was formerly with the Sun Electrical Co., Ltd., and latterly with Fred Reynolds, Ltd., as general manager.

Capital Expenditure Cuts

THIS week the Government's White Paper on economies in capital expenditure ("Capital Investment in 1948," Cmd. 7268, H.M. Stationery Office, 6d.) was published. It confirms the reduction in the generating plant programme already announced. Plant going into service is put at 1,150 MW in 1948, 1,600 MW in 1949 and at the rate of 1,500 MW per annum thereafter. It is stated that on the present estimates of demand and not taking account of contributions from plant over twenty-five years old there is likely to be a deficit of 824 MW during the winter of 1951-52; risks of load shedding have to be accepted in view of the critical economic situation. The North of Scotland hydro-electric schemes are to proceed, subject to review. It is estimated that there will be a saving of 27,000 tons of steel in 1948 from the reduction in the programme.

As regards industrial buildings, no new ones or extensions of old ones will be started for at least six months, except where they are essential to export trade or the saving of imports. All factory buildings and extensions which have not reached the steel erection stage are to be reviewed with the object of postponing at least half of the construction.

I.E.S. Summer Meeting

THE Illuminating Engineering Society has arranged to hold a summer meeting to take place from June 16th to 19th, 1948, at Harrogate. Papers to be given at the technical sessions are "Decorative Lighting," by Mr. L. H. Hubble; "The Design of Fluorescent Lighting Installations with special reference to the Textile Industry," by Messrs. E. Smith and T. C. Holdsworth; "New Lamp Developments," by Mr. N. L. Harris; and "The Application of Acrylic Plastics to Lighting Equipment," by Dr. W. E. Harper and Mr. Walker. At the annual general meeting, which will be included in the programme, an address will be given by Mr. Ward Harrison, director of engineering to the General Electric Co. of America. A lecture and demonstration on television will also be given by Mr. L. C. Jesty of Cinema-Television, Ltd.

Electronic Instruments Exhibition

A TRADE exhibition is being held at Brettenham House, Lancaster Place, Strand, W.C.2, from January 20th to 31st to introduce the new range of "Cintel" electronic instruments manufactured by Cinema-Television, Ltd. The apparatus on view will include an industrial metal detector, a standard counter, a demonstration oscilloscope, a universal oscilloscope, a laboratory oscilloscope and a process timer.

Trade Marks

THE following applications have been made for the registration of trade marks. Objections may be entered within a month from November 26th :—

CINTEL and designs. Nos. 646,371/3 respectively, Class 9. Scientific instruments, electronic appliances for use in industry, photo-electric cells, cathode ray tubes, and radio and television receiving and transmitting apparatus and instruments. — Cinema-Television, Ltd., Worsley Bridge Road, Lower Sydenham, S.E.26.

KLEXIT. No. 650,441, Class 9. Electrically operated vacuum cleaning apparatus.—Well Fire & Foundry Co., Ltd., 15, Berners Street, London, W.1.

B.I. No. 650,444, Class 9. Insulated electric cables, insulated electric wire; electric wiring systems and electric cable installations for power transmission and parts and fittings of such systems and installations, all included in Class 9; electric capacitors, electricity meters and electric welding apparatus.—British Insulated Callender's Cables, Ltd., 103, Mount Street, W.1.

DEREN (design). No. 651,940, Class 9. Electric domestic appliances included in Class 9. No. 651,939, Class 11. Electric installations and apparatus for lighting, heating, cooking, refrigerating and drying, and electric domestic appliances included in Class 11.—De Renzi, Holmes & Co., Ltd., Fox's Lane, Wolverhampton.

MECABRAIN. No. 652,371, Class 9. Electric apparatus for controlling a predetermined sequence of operations.—J. Guichard, Canton de Vaud, Switzerland. Address for service: c/o A. A. Thornton & Co., Napier House, 24-27, High Holborn, London, W.C.1.

SYNCYCLE. No. 652,374, Class 9. Electrical convertors and transformers.—Telephone Mfg. Co., Ltd., Hollingsworth Works, Martell Road, East Dulwich, London, S.E.21.

AWAZ. No. 653,143, Class 9. Radio receiving and transmitting apparatus.—Electrical & Engineering Cpn. (Overseas), Ltd., 29, Knightrider Street, London, E.C.4.

PORTMAC. No. 653,180, Class 9. Ammeters and speed and pressure indicators.—J. G. Mackenzie & A. N. Porter, Ltd., trading also as Broadway (Bristol) Engg. Co., 67, Wellington Hill West, Bristol, 9.

PINK MOUSE. No. 653,327, Class 9. Testing instruments for electric circuits.—H. R. Shaw, 125, Bills Lane, Shirley, Birmingham.

STRATA (design). No. 650,520, Class 11. Electric lamps and cycle lamps.—H. Skidmore, A. Phillips and B. Buckley, trading as Strata Engg. Co., 31, Crossbank Street, Oldham.

Design. No. 651,917, Class 11. Electric lighting apparatus and fittings therefor, and lampshades.—Charles Selz, Ltd., 88a, High Street, St. John's Wood, London, N.W.8.

SANTON. No. 652,876, Class 11. Electrical apparatus for heating water.—Santon, Ltd., Somerton Works, Newport, Mon.

American Electrical Exports

Leading Items in First Half of 1947

DURING the first half of this year American exports of electrical goods were nearly as much in value as during the whole of 1945, and more than twice as great as in the first six months of 1946. Provisional figures for the six months of 1947 show a total value of about $279 million against $129 million in the first half of 1946. The increase is the more striking when it is considered that during the first six months of 1947 shipments under Lend-Lease and relief schemes were relatively small.

In 1946 the total value of the exports from the United States of electrical machinery and apparatus, including those under Lend-Lease and the U.N.R.R.A. programme, but excluding those for the Forces, was $304 million. Of this total $251 million represented cash purchase. For 1945 the respective figures were $296 million and $121 million. The average annual value of exports of electrical equipment in 1936–38 was $102 million.

The United States Department of Commerce has resumed the publication of the foreign trade statistics in great detail. Space is not available now for more than a small selection of the different items exported in 1946. They are given below with notes of the principal destinations.

Class	Value ($000)
Generators, d.c.	1,065
To *Canada*	330
„ *Mexico*	164
„ *Brazil*	181
„ *South Africa*	61
Generators, a.c.	1,661
To *Mexico*	234
„ *Colombia*	153
„ *Brazil*	340
„ *U.S.S.R.*	196
Steam turbo-generator sets, under 500 kW	1,538
To *Mexico*	118
„ *Holland*	911
„ *U.S.S.R.*	118
Steam turbo-generator sets, 500 kW and larger	21,291
To *Iran*	900
„ *Mexico*	428
„ *China*	4,237
„ *Venezuela*	205
„ *U.S.S.R.*	14,348
Self-contained lighting sets	6,353
„ *Canada*	1,554
„ *Brazil*	652
„ *Mexico*	1,691
„ *Venezuela*	549
Flashlight batteries	4,934
To *China*	1,107
„ *Venezuela*	472
„ *Colombia*	530
„ *Brazil*	366
Power transformers, over 500 kVA	2,670
To *Mexico*	210
„ *Brazil*	622
„ *U.S.S.R.*	794
Distribution transformers, not over 500 kVA	1,840
To *Colombia*	143
„ *Mexico*	648
„ *Venezuela*	108
„ *Chile*	125
Mercury power rectifiers	407
To *U.S.S.R.*	50
„ *Brazil*	265
Convertors	1,482
To *U.S.S.R.*	267
„ *Brazil*	258
Complete battery chargers, non-rotating	1,252
To *Canada*	418
„ *Brazil*	106
„ *South Africa*	116
Circuit breakers and switches, over 10 A	4,044
To *Canada*	1,176
„ *Brazil*	374
„ *Mexico*	499
„ *Venezuela*	220
„ *U.S.S.R.*	458
Motors, stationary, 1–200 h.p.	9,374
To *Canada*	718
„ *Mexico*	1,372
„ *Brazil*	820
„ *U.S.S.R.*	1,575
Electric locomotives, mining and industrial	5,461
To *Canada*	400
„ *Brazil*	1,634
„ *U.S.S.R.*	2,437
Refrigerators, household	11,639
To *Canada*	1,161
„ *Mexico*	1,531
„ *Brazil*	1,605
„ *South Africa*	1,149
Ditto, commercial up to 1 ton	3,831
To *Canada*	477
„ *Venezuela*	273
„ *Mexico*	1,201
„ *Brazil*	363
Electric fans	925
To *Mexico*	329
„ *Brazil*	144
Lamps, small, filament	2,255
To *Canada*	366
„ *Argentina*	318
„ *India*	136
„ *Australia*	116
Ditto, large, filament	3,987
To *Colombia*	303
„ *South Africa*	173
„ *Canada*	329
Electric washing machines	2,052
To *Canada*	868
„ *South Africa*	58
„ *Mexico*	655
Electric flat irons	1,332
To *Canada*	215
„ *Mexico*	258
„ *South Africa*	580
Heating and cooking devices, domestic	4,308
To *Canada*	1,536
„ *Mexico*	404
„ *China*	351
„ *South Africa*	347
Starting, lighting and ignition equipment	6,463
To *Canada*	1,553
„ *Brazil*	473
„ *Mexico*	616
„ *U.S.S.R.*	800
Insulating material	1,949
To *Canada*	953
„ *Italy*	116
Wiring supplies and line material	2,482
To *Canada*	584
„ *Mexico*	253
„ *Brazil*	117
„ *Venezuela*	258

ELECTRICITY SUPPLY

Bristol Coal Clause Concession. Progress at New Kingston Station.

Alderley Edge.—INCREASED SALES.—The annual report of Mr. J. P. Heslop, engineer and manager of the Alderley Edge and Wilmslow Electricity Board, for the year ended March 31st last records an increase of nearly 20 per cent in the quantity of electricity sold. Of the total—17·8 million kWh—10·7 million was supplied for lighting, heating and cooking. The number of consumers rose by 327 to 5,445, and the sales of electricity per consumer averaged 3,270 kWh. Revenue from all sources amounted to £106,567, and there was a net surplus of £2,756.

Barnstaple. — REBATE. — Consumers are to receive a rebate of 10 per cent on the gross amount of their accounts for the December quarter.

Blackburn. — EXTENSIONS AT WHITEBIRK.—The Electricity Commissioners have authorized the Corporation to proceed with further extensions at the Whitebirk generating station at a cost of £1,500,000, to be in commercial operation by July, 1951. This will be the fourth stage; the first and second were inaugurated last March, and work on the third stage is now in progress.

Bristol.—CONCESSION TO HELP EXPORTS.—To help manufacturers in their export drive the Electricity Department has reduced the coal increment charge under the power tariff. At a press conference Mr. E. C. Willis, general manager, said that about 200 industrial concerns would be affected and the reduction would mean a concession of not less than £75,000 in a year. As a result of the continued rise in the price of coal the cost of electricity to industrial concerns had increased considerably, while the domestic consumer had suffered an increase of only 10 per cent.

Croydon.—NEW SWITCH HOUSE.—The Corporation has been advised that the estimated cost of the switch house, brickwork and roof coverings for which drawings are now substantially completed for the new generating station, is likely to be about £20,000. It is recommended that Sir Robert McAlpine & Sons, Ltd., should be instructed to carry out this work at the same prices as already settled with them in connection with the workshop buildings.

Edinburgh.—NEW BUILDINGS.—Plans have been approved for the construction of new transformer houses and a high-voltage building and ancillary buildings at the Portobello power station at an estimated cost of £100,000.

Heston and Isleworth.—DIESEL GENERATING SETS.—The Council has received consent to borrow about £52,000 for the purchase of two 1,000-kW Diesel-alternator sets.

Kingston-on-Thames. — MINISTER INSPECTS NEW STATION.—Last week Mr. G. R. Strauss, Minister of Supply paid a visit to the power station now in course of erection. He was shown round by Mr. E. J. Jarvis, the borough electrical engineer. Our picture shows the Minister with Mr. Jarvis and indicates the progress which has been made in the erection of the station.

Mr. G. R. Strauss with Mr. E. J. Jarvis at the new Kingston station

CABLES ACROSS THE THAMES.—Four 33-kV cables have been laid under the Thames opposite the new Kingston power station for feeding the new Esher substation. The cables, two for normal working and two for reserve, were laid by divers in a 4 ft 6 in. (1·37 metres) wide trench and covered with bags of cement.

London. — PILOT CABLE. — In view of the difficulty of obtaining supplies of pilot cable, of which the J.E.A. requires substantial quantities, the Local Distribution Committee has arranged that where opportunities arise, the chairman of the Committee shall accept such offers up to a total of £25,000.

Long Eaton.—HIGHER CHARGES.—Increases in electricity charges which are proposed include the raising of the domestic tariff running charge from ½d. to ⅝d. and that of the business tariff from ⅝d. to ¾d. All other tariffs will be advanced by 10 per cent.

Manchester.—LOANS OF OVER £4,000,000.—The Electricity Committee is asking the City Council to sanction powers to borrow £3,903,000 for the new Carrington generating station; £75,400 for new plant for Stuart Street power station; £30,000 for new housing estate lighting; and £9,000 for substation extension equipment.

Middlesex.—SCHOOL LIGHTING.—The County Council Education Committee has approved schemes for the provision of electric lighting in the following schools:—Enfield: George Spicer (£1,913); Bush Hill Park (£2,181); Eastfield Road Primary (£1,227); Alma Road Primary (£1,381). Southall: Clifton Road Primary (£1,265); Tudor Road Primary (£2,155); and Featherstone Road Junior (£425).

St. Helens.—NEW GENERATING STATION.—At the Town Council meeting last week, the Mayor announced that for two years negotiations had been in progress with the C.E.B. for the erection of a new generating station. Instructions to proceed had now been received. It had been decided to build the station upon a site near Bold Colliery, which was to become one of the most important collieries in South-west Lancashire. Parliamentary powers to proceed with the proposed development were now being sought.

Sheffield.—ESTIMATED DEFICIT.—Revised estimates submitted to the City Council this week show a net deficiency on the electricity undertaking for the year ending March next of £232,000. Preliminary estimates for the next year show a deficiency of £386,000. Total revenue for this year is estimated at £2,548,900 and for next year £2,683,300 and estimated expenditure £2,836,100 and £3,069,300 respectively.

Stockton-on-Tees.—SUPPLY TO ESTATES.—The Corporation is arranging to supply electricity to the Green Lane, and Hartburn housing estates, at an estimated cost of £17,755, for which loan sanction has been received.

Stoke Newington.—CHARGES UNALTERED.—After considering a report by its Charges Sub-Committee, the Electricity Committee recommends that charges for electricity and for hired apparatus and wiring shall not be increased, but it is to keep the position under review.

BULK SUPPLY FROM HACKNEY.—The Committee has approved the terms of the proposed agreement in connection with the installation of additional equipment at Hackney for the bulk supply to Stoke Newington. The estimated cost of the equipment and incidental works is £15,850, with a further £1,585 for overhead expenses.

CHANGE-OVER.—Pending the receipt of loan sanction from the Electricity Commissioners for the projected change-over schemes for the southern area of the borough, the work of changing over has been started in two districts as a matter of urgency so as to afford a satisfactory supply to the consumers. From October 16th to November 5th the apparatus of 444 consumers was converted.

Torquay.—OVERHEAD-LINE CONVERSION.—To meet the demands of new housing estates the Corporation is to convert from 2,000 V to 11,000 V the overhead line supplying the Ashburton district.

West Riding.—ELECTRICITY ORDER CONFIRMED.—Despite the refusal of the Ministry of Fuel and Power to act about a month ago, it is now reported that the Ministry is to confirm the Order applied for in August, 1946, by the Electrical Distribution of Yorkshire, Ltd., to enable the company to supply and distribute electricity in the townships of Appletreewick, Barden, Burnsall, Calton, Cracoe, Eshton, Flasby-with-Minterburn, Hartlington, Hebden, Hetton, Rylstone and Thorpe. The company has stated that the preliminary proposals are ready, but the materials position seems to be worsening instead of improving. Cracoe will be among the first of the villages to be supplied, but no date can be indicated.

Overseas

Canada.—RESTRICTIONS IN ONTARIO.—Because demands are expanding more quickly than new plant can be brought into operation the Hydro-Electric Power Commission of Ontario has banned the use of electricity for various purposes. These include signs, show-windows, and ornamental lighting for decorative or advertising purposes, and electric heating devices in stores and offices. The penalty for breach of the regulations is a fine of $100 a day.

Eire.—OIL-FIRED STATION.—Preliminary work has started on the Electricity Supply Board's project for constructing an oil-fired generating station on the North Wall Extension site, Dublin, next to the new ocean pier. The annual output should be about 40 million kWh.

France.—INCREASED CHARGES.—The French Government is to raise gas and electricity prices by 45 per cent.

B.E.A. Appointments

IN an advertisement in this issue the British Electricity Authority sets out a number of considerations relating to the making of generation and transmission appointments coming directly under the Authority. It is stated that there will be fourteen divisions in the organization for generation and transmission, corresponding geographically to the fourteen Electricity Areas, each headed by a divisional controller. The notice gives some indication of the salaries which will be paid for these and other positions and mentions the method of making application. It is noted that appointments under the Authority will be comparatively few and the great majority of those in the electricity supply industry will continue after the vesting date in their present occupations under existing contracts of service although they will automatically be transferred to the employment of the B.E.A. or Area Boards.

FINANCIAL SECTION

Company News. Stock Exchange Activities.

Reports and Dividends

Oldham & Son, Ltd.—On Wednesday last this company offered for subscription 250,000 5 per cent cumulative preference shares of £1 each at 21s. 6d. per share. In addition to this class the company has in issue £100,000 in 1s. ordinary shares (out of £120,000 authorized); there are no outstanding mortgages or debentures but there is an unsecured bank overdraft of £287,248 (at May 31st last). The company makes storage batteries, miners' lamps and electrical equipment, and specialized machinery for the hat-making industry. The net proceeds of the issue will be applied in reducing the company's liabilities; the directors consider that the working capital is adequate. It was stated in the prospectus that the net assets are sufficient to cover the nominal amount of the authorized preference share capital over 2½ times and the profits of the last financial year (after deducting profits tax) sufficient to cover the preference dividend over ten times.

Crabtree Electrical Industries, Ltd.—In the course of his speech at the annual meeting held on November 27th, Dr. H. Schofield (chairman), said that they proposed to set up a manufacturing organization in South Africa and arrangements were in hand in this connection. They had been steadily increasing their overseas representation and now had agents in most parts of the world.

S. Smith & Sons (England), Ltd., are maintaining the dividend on the deferred ordinary shares at 37½ per cent for the year to August 2nd last. The final dividend on the 7 per cent preferred shares is again 10½ per cent, making 17½ per cent for the year. The trading profit of the parent company amounted to £366,740 (£281,343) and the net profit after tax was £135,543 (£130,395). Combined trading profits totalled £960,887 (£684,238) and the net profit after tax was £317,246 (£206,863).

The British Electric Transformer Co., Ltd., reports a profit for the year ended September 30th last of £79,729, as compared with £59,645 for the preceding year. It is proposed to pay a final ordinary dividend of 6d. per share, making 3s. 6d. per share for the year. The balance carried forward is £635 (against £437 brought in).

Radio & Television Trust, Ltd. (formerly the Philco Radio & Television Cpn. of Great Britain, Ltd.).—No dividend is recommended on the ordinary stock for the past year; this compares with a 25 per cent dividend and a bonus of 15 per cent for 1945-46). The net trading profits, adversely affected on the radio side by the shortage of material and the fuel crisis, fell from £236,843 in 1945-46 to £10,576 last year. After allocating £8,000 (£107,500) for taxation and crediting provisions of £30,298 (nil) no longer required, the balance available was £10,851 (£90,539). In view of the improved prospects indicated by the results of the group for the first six months of the current year, payment of the preference dividend and of the interest on the sinking fund certificates for the two half-years to March 31st and September 30th, 1947, will be made on December 20th.

Jerusalem Electric & Public Service Corporation, Ltd.—The annual meeting was held in London on Monday, Mr. W. Shearer presiding. The chairman said that during the year they had sold 19·2 million kWh, an increase of over 12 per cent, but load shedding was necessary for a time. The number of consumers had risen by 2,304 to 28,173 and there were 3,500 on their books awaiting supplies. On a long-term view it had become clear that a very substantial increase in plant would be necessary. Balfour, Beatty & Co. had made a survey and had recommended a bulk supply arrangement. It was proposed to obtain an immediate supply of 3,000 kW from the Palestine Electric Corporation and a permanent supply after the construction of the necessary 36 miles of 66-kV double circuit transmission line from a new substation near Tel-Aviv. The Palestine company would provide these lines and the new generating plant at its Reading power house where 15,000 kW would be reserved for the Jerusalem supply. The Jerusalem company would make a substantial contribution towards the capital cost, and it was proposed to increase the company's borrowing powers by £P200,000, making £P800,000.

Calcutta Tramways Co., Ltd.—At the annual meeting last Friday in London Sir Geoffrey R. Clarke (chairman) said that the successful working of the undertaking had been seriously interrupted first by the unrest among the company's employees and later by the communal rioting. These circumstances were reflected in the reduction of £243,710 in traffic receipts. A committee of three had been appointed to examine the company's claim regarding the necessity to increase fares. The question of the purchase of the undertaking either by the Corporation or the Government had for the moment fallen into the background.

The Electrolytic Zinc Co. of Australasia reports a net profit for the year to June 30th last of £627,093. Dividend No. 49 requires £180,000 and Dividend No. 50 £345,000. After appropriating £15,217 for new plant and development, and £85,000 to general reserve, a balance of £216,985 is carried forward (against £215,109 brought in). The total dividends on the preference and ordinary were 17½ per cent (against 11 per cent).

Joseph Lucas, Ltd., report a profit for the year to July 31st last after crediting £58,482 profit from previous years, of £342,261, as compared with £312,727 for the preceding year. The final dividend is 15 per cent (against 12½ per cent), making 17½ per cent, less tax, for the year (against 15 per cent).

Lightfoot Refrigeration, Ltd., is maintaining its interim dividend at 3 per cent.

W. & T. Avery, Ltd., are paying an interim dividend of 5 per cent (same).

Edmundsons Electricity Corporation, Ltd., has announced an interim dividend of 3 per cent (unchanged).

The East African Power & Lighting Co., Ltd., has announced an interim ordinary dividend of 3 per cent (same).

Johnson, Matthey & Co., Ltd., have declared an unchanged interim dividend of 3 per cent.

George Kent, Ltd., are raising their interim dividend from 3 to 4 per cent.

Hick, Hargreaves & Co., Ltd., are paying an unchanged interim dividend of 2 per cent.

Stockholders' Representatives

The following have been appointed stockholders' representatives under the provisions of the Electricity Act, 1947:—

SIR EDWIN HERBERT (Sydney Morse & Co.), Alder House, 1-6, Aldersgate Street, E.C.1.—Woking Electricity Supply Co., Ltd.

MR. A. G. A. MACKAY, Hudson's Bay House, 52-60, Bishopsgate, E.C.2.—West Gloucestershire Power Co., Ltd.

MR. R. A. HAMLYN, River Plate House, 12-13, South Place, E.C.2.—British Power & Light Corporation, Ltd.

MR. W. MCGILL, 66, Queen Street, E.C.4.—Carmarthen Bay Power Station Co., Ltd., and Gorseinon Electric Light Co., Ltd.

MR. J. A. GATTI, 10, Maiden Lane, W.C.2.—Central London Electricity, Ltd.

MAJOR H. RICHARDSON, Ergon House, Horseferry Road, S.W.1.—London Power Co.

MR. C. R. HEATHCOCK, Toll End Road, Tipton, Staffs.—Midland Electric Corporation for Power Distribution, Ltd.

MR. T. H. BRAND, 11, Old Broad Street, E.C.2.—North-Eastern Electric Supply Co.

MR. P. HORSFALL, Galloway Water Power Co., Queen's House, Kingsway, W.C.2.—Galloway Water Power Co.

New Companies

Fylde Switchgear Co., Ltd.—Registered November 21st. Capital, £800. Directors: A. H. Capstick, A. S. Ellis. H. Fisher, and S. T. Malaney. Regd. office: 18, Manor Road, Blackpool.

J. E. Morris Lighting & Radio, Ltd.—Registered November 20th. Capital, £3,000. To acquire the business of electrical radio engineers and contractors carried on by J. E. Morris as J. E. Morris Lighting & Radio at 78, Green Lanes, Palmer's Green, N.13. Directors: J. E. Morris and Mrs. Clara Morris. Regd. office: 78, Green Lanes, Palmer's Green, N.13.

Dennis Factors, Ltd.—Registered November 22nd. Capital, £5,000. Manufacturers of, and dealers in, dynamos, motors and electrical plant generally, etc. Directors: R. A. Dennis, M. P. Upperton, and Mrs. Doris K. Upperton. Regd. office: 4, North End Road, Golders Green, N.W.11.

E. L. Fellowes & Co., Ltd.—Registered November 18th. Capital, £1,000. To acquire the business of an electrical and radio engineer now carried on by E. L. Fellowes at 308, Hoylake Road, Moreton, Ches., as E. L. Fellowes & Co. Directors: E. L. Fellowes and A. W. Southern. Regd. office: 308, Hoylake Road, Moreton, Wirral.

T. D. Nash, Ltd.—Registered November 20th. Capital, £1,000. Electrical contractors and engineers, manufacturers of electrical appliances, wireless, etc. Directors: T. D. Nash and S. J. Avern. Regd. office: The Mews, Walpole Road, Colliers Wood, S.W.19.

Bankruptcies

R. T. H. Brimfield, lately of Wellington Cottage, Wellington Square, S.W.1, lately carrying on business as Richfield Electrical Components, at 73-78, High Holborn, W.C.1, electrical contractor.—Third dividend of 10d. in the £, payable December 9th at Bankruptcy Buildings, Carey Street, London, W.C.2.

J. F. Bradley, 39, Mackenzie Road, Holloway, London, electrical engineer.—Receiving order dated August 18th, 1947, rescinded on November 14th, 1947, and petition filed July 15th, 1947, dismissed, on the grounds that it is in the opinion of the Court just and equitable and in the interests of all the creditors of the debtor that the discretion under Section 108 of the Bankruptcy Act, 1914, be exercised in favour of the debtor.

Liquidations

Richardsons Westgarth-Brown Boveri, Ltd.—Meeting of members in pursuance of Section 236 of the Companies Act, 1929, on December 29th at Northumberland Engine Works, Wallsend-on-Tyne, to receive an account of the winding-up by the liquidator, Mr. J. A. Tate.

Berec Battery Co., Ltd.—Meeting of members at "Ever Ready" Works, Hercules Place, Holloway, London, N.7, on December 29th to receive an account of the winding-up by the liquidator, Mr. W. S. Giles.

Isle of Arran Electric Light & Power Co., Ltd.—Meeting of members on December 31st at Bank Buildings, St. James's Street, London, S.W.1, to receive an account of the winding-up by the liquidator, Mr. J. R. Turnbull.

STOCKS AND SHARES

STOCK Exchange business continues to be confused owing to the various cross-currents, due to political as much as to financial considerations. Another heavy break in British Government securities, led by a slump in 2½ per cent Consols, followed the circulation of a persistent rumour that the compensation stock to be offered to holders of Home Railway securities will bear interest at 3 per cent, instead of the 2½ per cent which had been assumed in the days of Dr. Dalton, as the probable rate. The fall in gilt-edged securities has been accompanied by a fairly general rise in the prices of ordinary shares in well-known industrial companies. Home electricity supply ordinary shares, for example, show rises of sixpence in sixteen cases. Central Electricity Board and London Passenger Transport stocks are mostly a point or so higher. Thomas Tillings improved to 68s. 6d.

Compensation Stock

With only a month to run before the exchange of Home Railway securities into British Transport Stock, there is talk of a possible long-dated compensation stock bearing 3 per cent interest, was given weight enough to cause a decided depression in British Government issues, and to fortify confidence in the "nationalization" stocks. Irredeemable gilt-edged issues fell to a 3 per cent yield basis, and the long-dated stocks have gone some way in the same direction. In the Home Railway market, there is a noticeable scarcity of stock on offer. Electricity supply stockholders are, of course, closely concerned with the outcome of the railway event.

Dynamos and Telegraphs

In a firm electrical equipment market, quiet strength has been shown recently by Lancashire Dynamo & Crypto, and Telegraph Constructions. Compared with prices a month ago, the former have come up by stages from 4⅞ to 5⅛, and Telegraph Constructions from 47s. to 53s. 9d. Both companies end the financial year with the calendar, and normally publish their results in March or April. This year's interims have, in each case, been maintained at 5 per cent. For 1946, the Lancashire Dynamo company paid a total of 22½ per cent (including 7½ per cent as bonus) and Telegraph Construction 10 per cent. The respective yields work out at £4 8s. 0d. and £3 14s. 1d. per cent. The shares of both companies are firmly held and it is only occasionally that the market has a line to offer.

Oldham & Son Issue

Subscription lists were opened this week for the issue of 250,000 5 per cent cumulative preference shares, at 21s. 6d., in Oldham & Son. Issued capital consisted previously of £100,000 in 1s. ordinary shares, the holders of which were to receive preferential consideration in the allotment of the preference shares. Proceeds of the issue are to be applied in reducing the balance sheet liabilities, which include a bank loan of £287,000. At the issue price the shares yield £4 13s. 0d. per cent. The 1s. ordinary are quoted at 11s. On the basis of this year's 60 per cent dividend, they pay nearly 5½ per cent on the money.

Lucas Dividend

Joseph Lucas more than fulfilled expectations by the declaration of a 15 per cent final dividend, making 17½ per cent for the year. This is 2½ per cent better than the rate distributed without interruption since well before the war. At the advanced price of 75s. ex-dividend, the £1 shares return £4 13s. 4d. per cent. The price is still about 15s. below the year's best. Associated Insulation Products have declared a 6 per cent interim. Introduced in October at 14s., the 5s. shares are now 14s. 9d. A payment of 16 per cent for the year was forecast in the published particulars of the issue. British Rola's 10 per cent dividend is being paid on ordinary capital of £157,500 and compares with last year's 15 per cent on £75,000. The 2s. shares have eased to 3s. 3d., yielding £6 3s. 0d. per cent.

Changes on the Week

How difficult a matter it is for investment to find suitable employment for money is again illustrated by the improvements which have taken place in the ordinary shares of front rank industrials. Associated Electrical ordinary at 81s. 3d. are 2s. 6d. higher. Chloride Electric Storage at 5⅛ have added the fraction. Falk Stadelmann are similarly higher at 47s. 6d., as also are Hopkinsons at 5½. Reyrolles are amongst the shares to gain 2s. 6d., at 68s. 3d. and Automatic Telephones, at 62s., are 3s. 9d. better on the week. Westinghouse Brake stand out with a rise of 5s., at 67s. 6d. Smaller advances have been secured by Brush, 7s., Crompton Parkinson 30s., English Electric, 54s. 6d., Ever Ready, 34s., General Electric, 88s. 3d., Johnson & Phillips, 72s. 6d., Tube Investments, 6 13/16 x.d., and Strand Electric, 11s. 3d.

Mixed Movements

Cable & Wireless stocks have moved irregularly, the preference at 11s. 6d. being 4 points down; the ordinary, 173½, is 2 points higher. Marconi Marine rose 1s. to 29s. 9d. Globe Telegraph ordinary hardened to 43s. In the overseas groups, Calcutta Electric have fallen 3s. 9d. to 47s. 6d. Jerusalem Electric at 22s. 6d. and Palestine Electric at 30s. 3d. are both lower. On the other hand, Victoria Falls ordinary at 6⅞ show a gain of 10s., by reason of the anticipation that, when the company is taken over, the compensation terms will be handsome.

Next Week's Events

Monday, December 8th

CARDIFF.—At the South Wales Institute of Engineers, 5 p.m. I.E.E. Western Centre. "Comparisons between Gas and Electricity on the Basis of Coal Economy," by P. Schiller.

NEWCASTLE-ON-TYNE.—Neville Hall, Westgate Road, 6.15 p.m. I.E.E. North-Eastern Centre. "Some Observations on Oil Deterioration in Transformers and Switchgear," by H. Hurworth.

RUGBY.—Corporation Electricity Showroom, 6.45 p.m. I.E.E. Rugby Sub-Centre. "New Possibilities in Speech Transmission," by Dr. Ing. D. Gabor.

Tuesday, December 9th

BELFAST.—Queen's University, 6.45 p.m. I.E.E. Northern Ireland Centre. "Electric Traction on the Southern Railway," by C. M. Cock.

LONDON.—Savoy Place, W.C.2, 5.30 p.m. I.E.E. Radio Section. Informal lecture on "Commercial Disc Recording and Processing," by B. E. G. Mittell.

Lighting Service Bureau, 2, Savoy Hill, W.C.2, 6 p.m. Illuminating Engineering Society. "Decoration and Industrial Lighting," by Dr. J. H. Nelson.

S.E. London Technical Institute, 7.30 p.m. Association of Supervising Electrical Engineers (S.E. London Branch). "Practical Problems in the Distribution of Electricity," by E. H. Jesty.

WIGAN.—Wigan and District Mining and Technical College, 7 p.m. I.E.E. Mersey and North Wales Centre. "Recent American Hydro-Electric Schemes with special reference to Boulder Dam," by W. A. Hatch.

Wednesday, December 10th

ABERDEEN.—Caledonian Hotel, 7.30 p.m. I.E.E. North-East Scotland Sub-Centre. "The Klydonograph and Lightning Measurements," by Dr. E. Wilkinson.

BELFAST.—Belfast Association of Engineers. "Some Aspects of Modern Welding (with special reference to the application of X-rays)," by A. Marshall.

EDINBURGH.—Heriot-Watt College, 6 p.m. I.E.E. Scottish Centre. "The High-Pressure Mercury-Vapour Discharge and its Applications," by V. J. Francis and W. R. Stevens.

LONDON.—Savoy Place, W.C.2, 5.30 p.m. I.E.E. Transmission Section. "Some Observations on Oil Deterioration in Transformers and Switchgear," by H. Hurworth, and "An Electrical Resistance Test for Insulating Oils," by J. S. Forrest.

NORTHAMPTON.—College of Technology, St. George's Avenue, 7.15 p.m. Northampton and District Electrical Association. "Fractional H.P. Motors and their Applications," by G. Middleton and F. H. Lealand.

SHEFFIELD.—Royal Victoria Station Hotel, 6.15 p.m. I.E.E. Sheffield Sub-Centre. Report on "The Practical Training of Professional Electrical Engineers."

Thursday, December 11th

DUNDEE.—Royal Hotel, Union Street, 7 p.m. I.E.E. North-East Scotland Sub-Centre. Paper by Dr. E. Wilkinson.

GLASGOW.—At the Institution of Engineers and Shipbuilders, 7.30 p.m. Scottish Engineering Students' Association. "Water Tube Boilers," by E. G. Yarrow.

LONDON.—Savoy Place, W.C.2, 5.30 p.m. I.E.E. Installations Section. "Electrical Engineering Problems in the Tropics," by R. Allan.

MANCHESTER.—Engineers' Club, Albert Square, 6.45 p.m. I.E.E. North Western Students' Section. "Hydrogen Cooling for Rotating Machines," by D. F. Davidson.

Friday, December 12th

LEEDS.—Hotel Metropole, 6.30 p.m. Association of Mining Electrical and Mechanical Engineers (Yorkshire North-West Branch). "Electrical Locomotives," by Mr. West.

LONDON.—Savoy Place, W.C.2, 5.30 p.m. I.E.E. Measurements Section. "The Design, Testing and Calibration of a Combustible-Gas Detector," by R. Poole.

17, Victoria Street, S.W.1, 6.30 p.m. Society of Engineers. "Kelvin, Master of Measurement." Sound film and discussion.

At the Royal Society of Arts, John Adam Street, Adelphi, W.C.2, 6.30 p.m. Junior Institution of Engineers. Induction of Mr. R. A. Riddles as president.

MANCHESTER.—Carlton Restaurant, Brown Street, 7 p.m. Institution of Heating and Ventilating Engineers (Manchester and District Branch). Annual dinner.

NEWCASTLE-ON-TYNE.—Royal Station Hotel. I.E.E. North-Eastern Centre. Annual dinner.

King's College, 6.30 p.m. I.E.E. North-Eastern Students' Section. "Air-Blast Circuit Breakers," by G. K. Simpson.

NOTTINGHAM.—Nottingham Society of Engineers. Annual dinner.

Saturday, December 13th

LEEDS.—City Electricity Department Offices, Whitehall Road, 2.30 p.m. I.E.E. North Midland Students' Section. Problems afternoon.

MANCHESTER.—College of Technology, Manchester Association of Engineers. Conversazione and dance.

Bristol Electric Club

The annual dance of the Bristol Electric Club held on October 2nd realized £150 which has been contributed to the E.I.B.A. funds.

NEW PATENTS

Electrical Specifications Recently Published

The numbers under which the specifications will be printed and abridged are given in parentheses. Copies of any specification (1*s. each*) *may be obtained from the Patent Office*, 25, *Southampton Buildings, London, W.C.*2.

1941

J. COLLARD.—" Electrical apparatus for detecting the presence of moving objects." 775. January 20th, 1941. (594634.)

1943

British Thomson-Houston Co., Ltd.—" Washing machines." 11084. July 8th, 1942. (594518.) " Clothes washing machines." 11085. July 8th, 1942. (594519.) " Electric fuse links." 11997. July 28th, 1942. (594454.)

Landis & Gyr Soc. Anon.—" Electric wave filters." 20614. December 9th, 1942. (594520.)

Sperry Gyroscope Co., Inc.—" Limit switch arrangements." 21219. December 26th, 1942. (594397.)

1944

Telefonaktiebolaget L. M. Ericsson.—" Electro-motors for driving telecommunication apparatus." 896. January 13th, 1943. (594521.)

Marconi's Wireless Telegraph Co., Ltd.—" Electric signal-amplifying system." 3792. November 18th, 1942. (594523.) " Radio-pulse-echo systems." 5209. January 23rd, 1943. (594525.) " Luminescent materials and their manufacture." 10895. September 29th, 1942. (594645.) " Electron discharge device." 12544. June 30th, 1943. (594647.) " Electron discharge devices and associated circuits." 13659. October 17th, 1942. (594650.) " Electrical filter network." 13660. October 12th, 1942. (594529.) " Antenna system for ultra-short waves." 15095. November 12th, 1941. (594654.) " Radio aerial system." 15096. June 3rd, 1942. (594531.) " Omnidirectional radio navigation-aiding systems." 15097. September 30th, 1942. (594532.) " Reactance valve arrangement for angular-velocity modulators." 15099. May 26th, 1943. (594533.) " Radio position finding." 15858. November 14th, 1942. (594534.) " Radio antenna." 16347. June 17th, 1942. (594581.) " Radio location system." 16349. August 18th, 1942. (594535.) " Electric-pulse generator suitable for use in pulse communication systems." 17541. April 10th, 1943. (594659.) " Secret radio-communication system." 18418. December 7th, 1942. (594539.)

National Cash Register Co.—" Counting means comprising electronic devices." 9750. March 22nd, 1943. (594642.)

H. W. Dutcher.—" Electric cables." 10578. June 1st, 1944. (594459.)

Western Electric Co., Inc.—" Directional microphones." 11116. June 24th, 1943. (594646.)

A. H. Stevens (Aeronautical Manufacturing Corporation).—" Electromagnetic mechanism for solenoid valves and the like." 13145. July 10th, 1944. (594649.)

Metropolitan-Vickers Electrical Co., Ltd., and G. C. Collins.—" Spark gap electrical apparatus." 14633. July 31st, 1944. (594402.)

Standard Telephones & Cables, Ltd., C. W. Earp and C. E. Strong.—" Radio navigational systems." 14971. August 4th, 1944. (594530.)

Chance Bros., Ltd., and L. B. H. Hallett.—"Stand-by electric power generating equipment." 16852. September 4th, 1944. (594405.)

H. Balfour & Co., Ltd., W. L. Burns and J. W. Gibson.—" Electrical control system for controlling the operation of valves of water-gas plant." 16908. August 3rd, 1945. (594512.)

C. W. Eggleton.—" Tunable circuit arrangements." 17024. September 6th, 1944. (594657.)

Philips Lamps, Ltd. — " Phasemeters." 117184. September 23rd, 1943. (594658.)

R. B. Phillips and C. S. Wright.—" Means for terminating or tuning a concentric electrical line." 17543. September 13th, 1944. (594406.)

A. Sorley.—" Induction motors." 17611. September 14th, 1944. (594582.)

British Thomson-Houston Co., Ltd., and B. E. G. Forsling.—" Centrifugal type impellers for compressors and the like. 17776/7. September 18th, 1944. (594537/8.)

United Wire Works, Ltd., and W. D. T. Green.—" Apparatus for winding threads. filaments, wire, ribbon, strips, or other web or sheet material." 18676. September 29th, 1944. (594540.)

Raleigh Cycle Co., Ltd., and W. Brown.—" Electric generator for internal combustion engines." 24578. December 8th, 1944. (594413.)

1945

Patelhold Patentverwertungs & Elektro-Holding, Akt.-Ges.—" Control of high frequency oscillations by means of glow discharge tubes." 1206. December 13th, 1943. (594549.) " Method of making vacuum-tight joints between ceramic elements and other metallic or ceramic elements." 5698. March 16th, 1944. (594561.) " Method and arrangement for modulating impulses." 6710. March 16th, 1944. (594566.)

Western Electric Co., Inc.—" Transmission and reception of electromagnetic waves." 1546. January 19th, 1944. (594416.)

Westinghouse Electric International Co.—" Power plants, and particularly gas turbine power plants." 1637. January 31st, 1944. (594551.)

Plessey Co., Ltd., and M. W. G. Chitty.—

" Production of magnetizable materials and fabrication of magnets therefrom." 3321. February 9th, 1945. (Cognate application 3462/45.) (594474.)

A. M. Craig.—" Rotary electric switches." 4048. February 17th, 1945. (594589.)

General Electric Co., Ltd., H. G. Jenkins and E. E. Miles.—" Sockets adapted to co-operate with two-pin lamp caps." 4375. February 21st, 1945. (594675.)

A. C. Cossor, Ltd., D. G. Broscomb and M. W. Brooker.—" Electric welding apparatus." 4445. February 22nd, 1945. (594590.)

Lumalampan Aktiebolag.—" Choke coil transformer for discharge tubes." 4574. December 17th, 1943. (594591.) " Electric discharge tube." 5896. February 18th, 1944. (594563.)

F. Keeling, R. E. Keeling and W. Pitt.—" Electric water heaters." 5990. March 9th, 1945. (594592.)

British Thomson-Houston Co., Ltd.—" Dimethyl silicone elastomers." 6295. March 14th, 1944. (594481.) " Methods of hydrolyzing dimethyldihalogenosilanes." 10409. April 26th, 1944. (594485.) " Speed governing mechanism." 19734. August 7th, 1944. (594504.) " Dimethyl silicone elastomers." 19957. August 11th, 1944. (594506.) " Methods of processing soluble dimethyl silicone gums." 29455. November 8th, 1944. (594508.)

H. Grayson, D. E. Brown and G. C. Barker.—" Radio-location systems." 7514. March 24th, 1945. (594483.)

Callender-Suchy Developments, Ltd., and C. T. Suchy.—" Metallization of non-conductive materials by electro-deposition." 8189. April 3rd, 1945. (594679.) " Metallization of tubular structures particularly applicable to the manufacture of electrical resistive elements." 15846. June 21st, 1945. (594621.)

Soc. d'Electro-Chimie, d'Electro-Metallurgie et des Acieries Electriques d'Ugine.—" Preparation of powders suitable for the manufacture of permanent magnets." 9076. July 26th, 1944. (594681.)

Metropolitan-Vickers Electrical Co., Ltd., W. Merchant and J. T. Hansford.—" Axial-flow compressors." 9518. April 16th, 1945. (594682.)

Foster Transformers & Switchgear, Ltd., and R. I. Bagnall.—" Apparatus for electric arc welding." 11559. May 7th, 1945. (594486.)

Aktiebolaget Elektrolux.—" Absorption refrigerating apparatus." 12043. June 10th, 1944. (594604.)

A. Barnett.—" Electrical switch plugs and sockets." 12081. May 1st, 1946. (594426.)

New York Air Brake Co.—" Fluid pressure-actuated electric switches." 12457. July 27th, 1944. (594490.)

Telephone Manufacturing Co., Ltd., and W. Saraga.—" Wave transmission networks." 13456. May 29th, 1945. (594431.)

E. G. C. Burt.—" Electronic control apparatus particularly for controlling the speed of d.c. motors." 13926. June 2nd, 1945. (594612.)

Maschinenfabrik Oerlikon.—" System for connecting alternators in parallel." 14105. June 22nd, 1944. (594614.)

E. J. Ambrose and E. F. G. McGill.—" Insulation of metal electrodes." 14653. June 9th, 1945. (594434.)

Standard Telephones & Cables, Ltd., and W. A. Windsor.—" Mounting of electrodes in electric vacuum tubes." 14994. June 13th, 1945. (594619.)

F. Tench (Automatic Electric Laboratories, Inc.).—" Electro-magnetic relays." 15060. June 14th, 1945. (594495.)

R. J. Aspeek.—" Portable power-operated scraping machines." 15064. June 14th, 1945. (594435.)

Evans Electroselenium, Ltd., and A. E. Evans.—" Colorimeters." 15571. June 19th, 1945. (594497.)

L. S. B. Alder, M. Slaffer, F. A. Mitchell and J. Buckingham.—" Concentric-line resonant circuits." 15909. June 21st, 1945. (594622.)

Ferranti, Ltd., H. Easton and J. Seddon.—" Miniature multi-contact enclosed-type relays." 16104. June 25th, 1945. (594623.)

General Electric Co., Ltd., and S. W. Richards.—" Electric signalling systems for use for example in mines." 16628. June 29th, 1945. (594500.)

General Electric Co., Ltd., and J. Cates.—" Circuits for electric discharge lamps." 16766. July 2nd, 1945. (594626.)

Electrical Instrument Co. (Hillington), Ltd., and W. Morris.—" Electrical measuring instruments." 16950. July 3rd, 1945. (594501.)

W. W. Triggs (Farnsworth Television and Radio Corporation). — " Photo-electric cell arrangement with electron multiplication." 16984. July 3rd, 1945. (594629.)

1947

F. B. Dehn (J. E. Fast & Co.).—" Support for a roll of strip fed to a condenser winding or other machine." 10417. November 6th, 1944. (Divided out of 594509.) (594452.)

F. Tench (Automatic Electric Laboratories, Inc.).—" Electrical contact spring sets suitable for use on electro-magnetic relays." 11555. (June 14th, 1945.) (Divided out of 594495.) (594510.)

Amended Specification Published

575739. British Thomson-Houston Co., Ltd., and others.—" Adjustable impedance device for use in wave guides."

Bibliography on Cement

A BIBLIOGRAPHY of books and technical papers on cement and concrete has been issued by the Cement and Concrete Association (Information Section), 52, Grosvenor Gardens, London, S.W.1. It is arranged in chronological order, indicating whether tables, diagrams and illustrations are included and in which of nine London libraries they can be consulted. An alphabetical author index is provided.

CONTRACT INFORMATION

Accepted Tenders and Prospective Electrical Work

Contracts Open

Where "Contracts Open" are advertised in our "Official Notices" section the date of the issue is given in parentheses.

Bury.—January 5th. Electricity Department. One 40-kV, d.c. testing equipment and one h.v. cable fault localizing bridge. (See this issue.)

Egypt.—Ministry of Public Works. Supply and erection of the main items of mechanical and electrical equipment for the Diesel generating station and water filtration and ice-making plants required for the Aswan Dam Hydro-Electric Scheme. Specifications and conditions of contract may be obtained from the consulting engineers to the Egyptian Government, Kennedy & Donkin. (See this issue.)

Epsom and Ewell.—January 19th. Electricity Department. H.v. and l.v. cable and h.v. switchgear and transformers. (November 28th.)

Farnworth.—December 10th. Electricity Department. Steel substation kiosk, two 500-kVA transformers, 11-kV switchgear, meters, overground pillar boxes and underground boxes. (November 21st.)

India. — DELHI. — December 18th. Delhi Central Electric Power Co., Ltd. 6,600-V, 400-V and multicore cables. (November 21st.)

Newcastle-on-Tyne. — Corporation. Music relay apparatus. (November 28th.)

Walsall.—January 2nd. Electricity Department. One 500-kW mercury-arc rectifier, one 550-V d.c. switchboard and one remote supervisory control equipment. (November 28th.)

Warwickshire.—Firms wishing to have their names placed upon a list of approved contractors for heating, laundry and kitchen equipment, electric lighting and power installation and other services should apply to the county architect by February 23rd. (See this issue.)

Orders Placed

Glasgow.—With reference to the notice relating to an order placed for boiler feed pumps for Braehead power station, which appeared in our November 14th issue, we regret the statement that the order was placed with Harland & Wolff, Ltd., was incorrect. The Harland Engineering Co., Ltd., Alloa, inform us that this order was placed with them and that they have no connection with Harland & Wolff, Ltd.

Grimsby.—Corporation. Accepted. Pipework in connection with the extension of the generating station (£6,681).—Aiton & Co.

Stoke Newington. — Electricity Committee. Recommended. Cables and cable laying for twelve months.—Henley's.

Contracts in Prospect

Particulars of new works and building schemes for the use of electrical installation contractors and traders. Publication in this section is no guarantee that electrical work is definitely included. Alleged inaccuracies should be reported to the Editors.

Bath.—School, Fosseway, Odd Down; Tew & Oliver, architects, 7, Northumberland Buildings.

Billingham-on-Tees.—Research laboratory, Belasis Lane, for Imperial Chemical Industries, Ltd. (Billingham Division); J. Gerrard & Son, builders, Manchester.

Houses (82) at Billingham Junction for the U.D.C.; Kitching & Co., architects, 21, Albert Road, Middlesbrough.

Bolton.—Extensions to works for J. Pendlebury & Sons, Ltd., Victoria Street.

Border.—Houses (100), at Hallbankgate and Brampton; R.D.C. surveyor, Victoria Place, Carlisle.

Cheadle.—Houses (46), Cheddleton (£64,601), for R.D.C.; J. A. Bailey, builder, Tape Street.

Clerkenwell.—Factory premises, Bath Street; Willen Key Co. (1946), Ltd., 11, Bruton Street, Mayfair, W.1.

Cockermouth.—Staff quarters at Dovenby Hall Colony, Cumberland C.C.; county architect, 4, Alfred Street North, Carlisle.

Consett.—Houses (36), Bradley Square, Leadgate, for U.D.C.; F. J. McClean, builder, Derwent Hill, Ebchester.

Cork.—New factory at Ballyphehane for W. J. Hickey, Ltd., Maylor Street; J. R. Boyd Barrett, architect, 61, South Mall.

Darlington.—Three-storey warehouse, Crown Street, for Foster, Morland & Scotto, Ltd., builders' merchants; Clayton & Deas, architects, High Row Chambers.

Dumfries.—Garage, houses and motor repair shops (£35,000) for Scottish Motor Traction Co., Edinburgh; manager, Edinburgh.

Enfield.—Two factories, Garfield Road; Commercial Structures, Ltd., Staffa Works, Staffa Road, Leyton, E.10.

Epping.—"Agricultural" houses (120) on seven sites; R.D.C. surveyor, 209, High Street.

Fawley.—Large new refinery, etc.; Agwi Petroleum Co., Ltd., Appletree Court, Lyndhurst, Hants.

Felling (Co. Durham).—Houses (50) for the U.D.C.; J. M. Black (Jun.), Ltd., builders, Back Glen Street, Hebburn-on-Tyne.

Glasgow.—Factory in Nitshill Road for Robert Currie & Sons, aluminium foundry, Riverside Road, Glasgow; the manager.

Gosforth (Northumberland).—Offices to accommodate staff of 400, for Thomas Hedley & Co., Ltd., City Road, Newcastle-on-Tyne; S. Burn, staff architect.

Grangemouth.—Enlarging and modernizing refinery for Scottish Oils, Ltd.; manager, Scottish Oils.

Hartlepool. — Flats (360), West View, for Sutton Dwellings Trust, London; C. S. Errington, architect, 46, Grainger Street, Newcastle-on-Tyne.

Hove.—Hangleton County Primary School, for East Sussex E.C.; E. J. Symcox, County Hall, Lewes.

Lambeth.—Extensions to premises, Union Jack Club, Waterloo Road; R. Mountford Pigott, 14, Cromwell Place, S.W.7.

Leeds.—Factory premises, Burly Road and Somerby Street, for Campbell, Stewart & Macdonald; W. Tocher, architect, 8, Blenheim Terrace.

Lowestoft.—New factory for British American Salmon Curing Co., Ltd., Ness Road; Mence & Smith, architects, 15, Adeline Place, Bedford Square, W.C.1.

Manchester. — Offices and laboratories; Scherrer & Hicks, 10, Dover Street, London, W.1.

Printing works, Waterloo Road, for *News of the World* proprietors; Ellis, Clarke & Gallenough, architects, 58, Grosvenor Street, London, S.W.1.

Middlesbrough.—Alterations to the hospital block at the Broomlands Cottage Homes, for the E.C. (£2,500); J. H. Proudlock, builder, Linthorpe.

Neath.—New works for Metal Box Co., Ltd.; S. N. Cooke & Partners, Sun Buildings, Bennetts Hill, Birmingham.

Northwich.—Therapeutical clinic, Victoria Infirmary, for Board of Management; Wright & Hamlyn, architects, Patten Chambers, Winmarleigh Street, Warrington.

Rosyth. — Houses (120) for Dunfermline Corporation (£147,181); burgh surveyor, Dunfermline.

Ryton (Co. Durham).—Pithead baths at Greenside Colliery; National Coal Board, Newcastle-on-Tyne.

Salisbury.—Houses (138), Paul's Dean Estate, for Ministry of Supply; Ministry of Works.

Shrewsbury.—Offices, police headquarters and other public buildings, for administrative centre; county architect, 5, Belmont.

Somerset.—Model farm buildings (£38,000), for Agricultural E.C.; county architect, Park Street, Taunton.

Stoke-on-Trent.—Pottery works, Baddeley Green; Co-operative Wholesale Society, Ltd., 1, Balloon Street, Manchester, 4.

Strabane.—Houses (56), Sion Mills and Newtonstewart, for R.D.C.; M'Carthy & Lilburn, Scottish Provident Buildings, Belfast.

Sunderland.—New mill for British Ropes, Ltd., Fulwell Road; G. T. Brown & Son, architects, 51, Fawcett Street.

Two garages and a depot for transport under- (£386,000); borough engineer.

Swansea.—Extensions to buildings of University College; Sir Percy Thomas & Son, 10, Cathedral Road, Cardiff.

Wakefield.—Extensions to wire works, Denby Dale Road; Spencer Wire Co., Ltd.

Warrington.—Houses (56), Poplars Avenue (£62,203), for T.C.; W. L. Challinor, builder, 2, Brian Avenue.

Municipal Reports

Chesterfield.—An increase of 11 per cent in sales of electricity in 1946-47 is reported by the electrical engineer and manager (Mr. W. W. Grimes). The total consumption was 43·3 million kWh and the growth in domestic usage more than accounted for the increase over 1945-46. To the additional domestic consumption at the cheaper rates is attributable a decline in revenue per kWh sold from 1·15d. to 1·09d. Gross income, at £208,404, was up by £15,123, while working expenses (£203,959) advanced twice as much, by £33,628, and there was a net loss on the year's working of £17,577, compared with a deficit of £8,797 in 1945-46.

Oldham.—After falling from the wartime peak of 94·8 million kWh in 1943-44 to 75·1 million in 1945-46, sales under the power tariff recovered to 83·7 million kWh last year. The chief engineer and manager (Mr. E. Binns) points out that this compares with only 56 million kWh in 1938-39. There has been considerable activity in industrial electrification, but a limiting factor in mill conversion from steam to electric drive has been the difficulty of obtaining electric motors and other equipment. Total sales of the Department last year amounted to 130·5 million kWh compared with 112·4 million in 1945-46. Revenue advanced by £81,158 to £627,343 and working costs by £86,728 to £510,992. Before transferring £6,137 (£11,103) to capital account and £9,231 (nil) to the rate fund, there was a net profit of £58,295 (£58,024).

Stockton-on-Tees.—On the principle that an industry either goes forward or it goes back to quote the words of the general manager and engineer, Mr. N. Hunter—applications for new supplies have been dealt with even though they may cause temporary embarrassment. Several new factories were connected up during the year and altogether the total number of new consumers was 725. During 1946-47 the undertaking sold 32·7 million kWh, an increase of 5·3 million on 1945-46 the bulk of which was accounted for by additional consumption under the domestic rate. Income rose by £34,982 to £190,435 and working expenditure by £38,747 to £174,547, there being a net profit on the year of £193. The average price received per kWh sold decreased from 1·26d. to 1·18d.